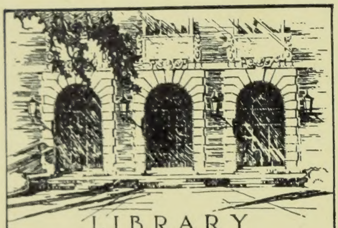

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VOL. XIII. No. 3

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STATE MANUAL TRAINING
NORMAL SCHOOL

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PITTSBURG, KANSAS

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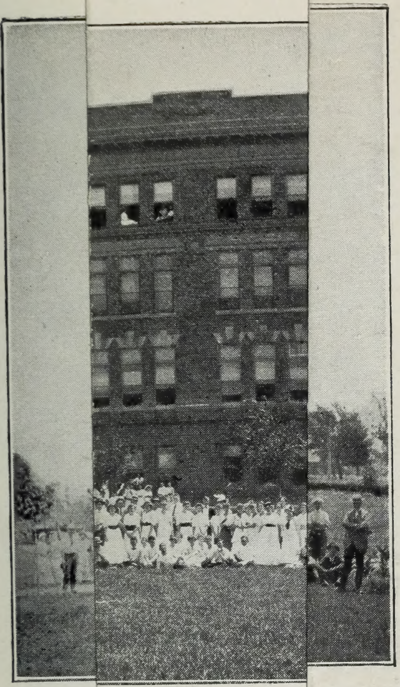

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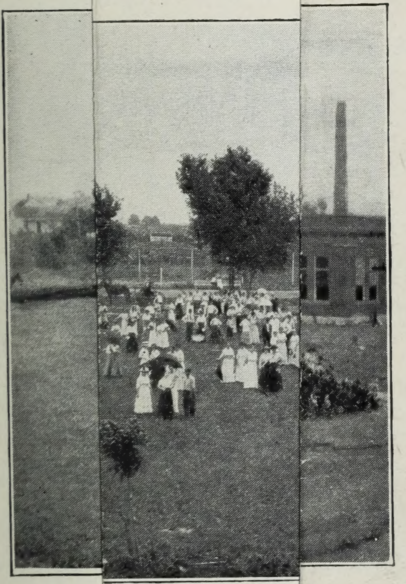

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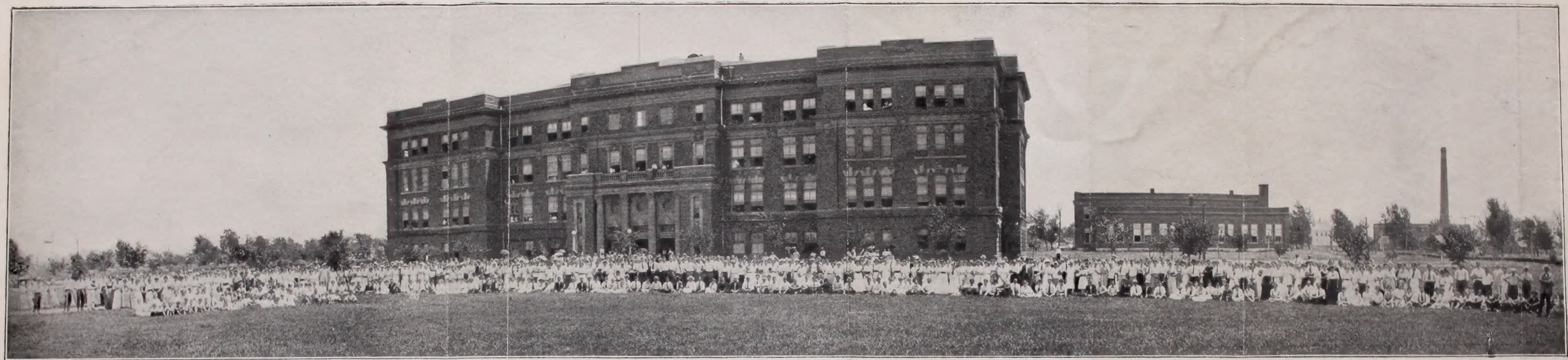

Summer School Students, 1916.

Playground Group at S. M. T. N.

VOL. XIII. No. 3

June, 1917

Kansas
State Manual Training
Normal School

A COLLEGE FOR TEACHERS INCLUDING ALL THE
GENERAL AND INDUSTRIAL ARTS AND
VOCATIONAL SUBJECTS

PITTSBURG

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W. R. SMITH, State Printer.
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Russ Hall, State Manual Training Normal School.

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State Board of Administration for the Educational Institutions of Kansas.

Hon. ED. T. HACKNEY, *President*......................Wellington.
Mrs. CORA G. LEWIS................................Kinsley.
Hon. E. W. HOCH...................................Marion.
LEE HARRISON ....Secretary.

CALENDAR, 1917-'18.

September 11, Tuesday	Fall semester opens.
November 12, Monday	Mid-semester term opens.
November 27 to December 3	Thanksgiving vacation.
December 18, Tuesday	First semester musical recital.
December 19, Wednesday	Contest in oration and debate.
December 21, Friday	Work closes for 1917.
January 2, Wednesday	Resupmtion of first semester's work.
January 18, Friday	First semester closes.
January 21, Monday	Second semester opens.
March 25, Monday	Spring term opens.
March 29, Friday	Commemoration day.
May 19, Sunday	Baccalaureate.
May 22, Wednesday	Annual recital by music department.
May 23, Thursday	Contest in dramatic art and declamation.
May 24, Friday	Commencement.
May 27, Monday	Summer term opens.
July 26, Friday	Summer School closes.

CALENDAR FOR 1917.

JANUARY.

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INTRODUCTORY.

THE Kansas State Manual Training Normal School is located at Pittsburg, Kan. The city of Pittsburg is located 135 miles south and west of Kansas City. It has a population of approximately 20,000, being the metropolis of southeastern Kansas. The city is surrounded by that part of the state of densest population and greatest industrial wealth and activity. Pittsburg is a city of beautiful homes, factories and commercial institutions. Its railway facilities are the very best, having an interurban railway system of over 100 miles, connecting it with twenty-five other towns and cities and covering a radius of twenty-five to thirty miles. The Santa Fe, Missouri Pacific, Frisco, and Kansas City Southern are its railways. These, with the excellent interurban system, constitute railway facilities unsurpassed by any city in our state.

The growth of the State Manual Training Normal School since its founding fourteen years ago is probably excelled by no other school in the United States. The total enrollment for the current year will exceed 2750.

The aim of the institution is the highest possible degree of efficiency in the preparation of teachers for every field of public-school activity. Perhaps in no teachers' college is there greater effort toward a vital functioning and interfunctioning of the so-called cultural or academic and the industrial and vocational subjects.

Two-year courses leading to the normal diploma, which is a life certificate to teach in the elementary and junior and two-year high schools of Kansas, are offered in the following: kindergarten teachers, primary teachers, intermediate grade teachers, rural teachers, languages, commercial, agriculture, drawing supervision, music supervision, handcraft work, industrial arts, domestic science and art, public speaking, playground directorship, athletic coaching.

Four-year courses leading to the college degree, with college major work in the following departments, are offered: domestic science and art, industrial arts, biology, English, history, mathematics; physical science, including chemistry and physics; education, languages.

Special certificates entitling the holder to teach manual training, domestic science and art, agriculture, commercial subjects, drawing and any other occupational subject in any of the public schools of Kansas will be granted upon completion of special courses in these subjects.

Last year students from seventy-six counties in Kansas and from sixteen states were in attendance at the State Manual Training Normal School. Demands for our graduates are now coming from many states.

Two years ago the Board of Administration authorized the introduction of the factory system in all shop work and shop practice. The hope of this plan thus far has worked out most satisfactorily. It is resulting in just what was anticipated—a deeper interest, a more practical application, a broader experience, a better product, and a financial remuneration to the student in his shop practice. This plan is enabling the tradesman or student, as soon as he is sufficiently proficient with tools, to earn at least a part of his expenses while attending school.

A structure 139 by 286 feet houses the shops and other industrial and applied arts of the institution. This building is one of the largest and most completely equipped in the country, affords unusual opportunity for men in preparation for this field of teaching.

The demand for prepared teachers in all lines of industrial and applied arts is rapidly increasing, while the present supply is wholly inadequate.

The State Manual Training Normal School is offering extensive courses leading to preparation for teachers in every field of industrial and applied arts for the rural, elementary, high-school and college teacher.

Opportunity is afforded each year for industrial surveys in near-by cities and communities. The department of household arts is giving much attention to a practical study of home conditions, community life, and the accumulation of other information of most practical nature.

In addition to this wide field of industrial and vocational education of teachers, seven distinct departments of academic work are offered. The institution is attempting to carry out the unique idea of affording opportunity to teachers preparing in strictly academic lines to come into closest contact, and to acquire some knowledge of the industrial and vocational fields of education, and thereby get a more vital and practical knowledge of all academic subjects.

While it is far better to enter at the beginning of terms or quarters, students may enter and begin work more or less profitably at any time of the year. The summer session of nine weeks opens June 4. A most attractive and helpful program has been arranged. In addition to the regular faculty, increased by several regular instructors, many lectures and conferences by leading educational authorities are scheduled.

For full particulars regarding the School address

W. A. BRANDENBURG, *President.*
Pittsburg, Kan.

Kansas State Manual Training Normal.

The Faculty.

The names of the members of the faculty are arranged in order of their tenure, except President.

WILLIAM A. BRANDENBURG, PH. B.,

President

Drake University, Ph. B., 1895-1900, Graduate of College of Liberal Arts; Superintendent Park Avenue Schools, Des Moines, Iowa, 1900-1903; Superintendent Capital Park Schools, Des Moines, Iowa, 1903-1905; Superintendent of Schools, Mason City, Iowa, 1905-1910; Superintendent Schools, Oklahoma City, 1910 to August, 1913; Assistant Professor in Department of Education, Drake University, Summer Sessions, 1903, 1904, 1905; Member National Education Council; Author of "Outline Studies in U. S., History and Civics."

ODELLA NATION,

Librarian.

Special Student in Library Methods, Kansas State Normal, 1903; State Manual Training Normal, 1903—.

LYLE BROWER, B. S.,

Professor of Drawing and Design.

B. S., University of Illinois, 1898; Graduate Student in Education and Drawing, University of Illinois, Summer Terms, 1902-1904; Director of Manual Training and Drawing, Public Schools, Rockford, Illinois, 1898-1903; Mechanical Drawing Instruction in Y. M. C. A. Evening School, Rockford, Illinois, 1899, 1900, 1901; Director of Vacation School, Rockford, Illinois, 1899, 1900; Director Manual Training, Elgin, Illinois, 1903-1904; Director Manual Training and Instructor in Free-hand Drawing, High School, Springfield, Illinois, 1904-1905; Member National Society for the Promotion of Industrial Education, 1914; Trustee of the Kansas Federation of Art, 1916; Professor of Drawing and Design, Kansas State Manual Training Normal, 1905—.

ELSA SCHOSHUSEN, A. B.,

Kindergarten Critic Teacher in the Training School.

Kindergarten and Primary Diploma, Kansas State Normal, 1901; Life State Certificate Kansas State Manual Training Normal, 1910; Teacher, Pittsburg City Schools, 1905-1906; Kindergarten Critic Teacher, Kansas Manual Training Normal, 1906—; A. B., State Manual Training Normal, 1913.

G. W. TROUT, A. B., A. M.,

Professor of History and Social Sciences.

A. B., Ottawa University, 1899; Student of Theology and Sociology, Rochester Seminary, 1899-1902; M. A., Ottawa University, 1902; Professor of History and Social Sciences, Kansas State Manual Training Normal, 1906—.

EULALIA E. ROSEBERRY, B. S.,

Professor of Geography.

Diploma, Kansas State Manual Training Normal, 1906; Diploma and Life State Certificate, Kansas State Normal, 1907; Professor of Geography, Kansas State Manual Training Normal, 1907—; Special Work, Chicago University. B. S., State Manual Training Normal, 1916.

JAMES ANDERSON YATES, B. S., M. S.,

Professor of Chemical and Physical Sciences.

B. S., University of Kentucky, 1890; M. S., University of Kentucky, 1899; Graduate Student, University of Chicago, Summer Terms, 1895, 1896, 1898, 1900, 1901, 1902; Fellow American Association Advancement of Science; Principal Laurel Seminary, London, Kentucky, 1890-1892; Professor Natural Sciences, Williamsburg Institute, 1892-1897; Professor, of Natural Sciences, Ottawa University, 1897-1907; Union Pacific Fossil Field Expedition, Summer 1899; Assistant Geologist Kansas State Geological Survey, Summers, 1903, 1904, 1905, 1906; Professor Physical Sciences, Kansas State Manual Training Normal, 1907—.

ERMINE OWEN, M. A.,

Professor of English.

M. A., McGee College (now Missouri Valley College), 1879; Summer Student in Hammil School of Expression, 1886 and 1887; Chicago Conservatory of Expression, 1888; Fritz Krunmel Turnverein, New York, 1902; Chicago Normal School, 1903; Head of Department of History and Civics, State Normal School, Kirksville, Missouri, 1883-1899; Professor of Oratory and Physical Culture and Assistant in English, State Normal School, Normal, 1907—.

D. M. BOWEN, B. A.,

Principal of Training School.

Diploma, Central Normal College, Danville, Indiana, 1885; B. A., Normal College Kansas, of Chicago, Summer, 1914; Life Diploma, Kansas Board of Education, 1905; Teacher, Fort Scott, 1889; Special Work, Indiana University, Summer 1892; Special Work, University Rural and Village Schools, 1885-1888; Ward Principal, 1889-1892; Principal High School, Fort Scott, 1892-1895; Superintendent City Schools, Fort Scott, 1895-1909; Principal of Training School, Kansas State Manual Training Normal, 1909-1913; Secretary, State Board of Education Administration, 1913-1915; Principal of Training School, Kansas State Manual Training Normal, 1915, 1916.

ORIS P. DELLINGER, A. B., PH. D.,

Professor of Biology.

Diploma, Indiana State Normal, 1900; A. B., Indiana State University, 1904; Fellow in Biology, Clark University, 1904-1907; Ph. D., Clark University. 1907; Fellow American Association Advancement of Science; Instructor in Biology, Indiana State Normal, 1901-1903; Instructor in Botany and Nature Study, Indiana University, Summer Terms, 1902-1908; Assistant in Biology, Clark College, 1904-1907; Instructor in Biology, Clark College, 1909-1908; Professor of Biology, Winona College, 1908-1909; Professor of Biology, Kansas State Manual Training Normal, 1909—.

JOHN WILLIAM FUHRER, B. S.,

Director Physical Education and Athletics.

B. S., Doane College, 1906; Student Director of Physical Training, Doane College, 1904-1906; Director of Physical Training, Doane College, 1906-1908; Physical Director Y. M. C. A., Springfield, Missouri, 1908-1909; Director of Physical Education, Kansas State Manual Training Normal, 1909—.

LORA LEACH, B. O., A. B.,

Assistant Professor in English and Public Speaking.

Graduate of Baker University, Baldwin, Kansas; Graduate of King's School of Oratory, Pittsburg, Pennsylvania, B. O.; Graduate of State Manual Training Normal, Life Diploma Course; Graduate of State Manual Training Normal, Degree Course, A. B.; 1914, English and Public Speaking in the Eureka High School, Eureka, Kansas; English and Public Speaking in State Manual Training Normal, 1910—.

MARTHA McGARVIE,

Secretary.

Graduate Pittsburg Business College, 1905; Secretary, Kansas State Manual Training Normal, 1908—.

LILLIAN I. McLEAN, B. S.,

Primary Critic Teacher in Training School.

Primary Teacher, Fort Scott, 1903-1909; Primary Teacher, Kansas City, Missouri, 1909; Primary Critic Teacher, Kansas State Manual Training Normal, 1911—.

MRS. LENA G. MARTIN-SMITH, A. B.,

Assistant Librarian.

Life State Certificate, Kansas State Manual Training Normal, 1911; A. B., Kansas State Manual Training Normal, 1913; Assistant Librarian, 1911—.

JAS. W. HANBERY, A. B.,

Assistant Professor History.

A. B., Phillips University, 1913; Assistant Professor History, State Manual Training Normal, 1913-1914; Fellow in American History, Kansas University, 1914-1915; Assistant Professor History, 1916-1917.

BELLE PROVORSE.

Graduate of Montgomery County High School, Independence, Kansas, 1909; National Business College, Independence, Kansas, 1910; Teacher's Certificate, Gregg School, Chicago, 1911; Shorthand Instructor, Coffeyville Business College, Coffeyville, Kansas, 1911-1912; Shorthand Instructor Farmers' Business College, Fort Worth, Texas, 1912-1913; Shorthand Instructor, State Manual Training Normal School, 1913; Stenographer, State Manual Training Normal School, 1914—.

NELLIE M. CRANE, B. S.,

Supervising Critic in the Training School.

Student, Ohio Wesleyan University, 1906-1908; Ohio State University, 1909; Instructor in English, East Liverpool, Ohio, High School, 1908-1909; Ward Principal, East Liverpool, Ohio, 1910-1911; Departmental Work, Oklahoma City Schools, 1911-1913; Critic in Training School at State Manual Training Normal, 1913—.

J. G. WILKINS,

Instructor in Free-hand Drawing, and Wood Finishing.

Two Summers' Work in the Fine Arts Institute, Kansas City, Missouri; One Year's Credit in the Academy of Fine Arts, Chicago, Illinois; Assistant in the Life Class in the Academy of Fine Arts; One and One-nalf Years' Work in the Kansas State Manual Training Normal; Instructor in Kansas State Manual Training Normal, 1914—.

HATTIE MOORE MITCHELL, A. M.,

Professor of Methodology, and Dean for Women.

Ph. B., Drake University, 1906; Pe. B., Drake University, 1898; A. M., Drake University, 1907; Student, University of Chicago, 1909; Teacher of Mathematics in High School, Mason City, Iowa, 1888-1890; Principal of Schools, Floyd, Iowa, 1893-1895; Preceptress in Nora Springs Seminary, 1895-1897; Supervisor, Training School for Primary Teachers, Drake University, 1897-1902; Dean of Women, Drake University, 1902; Instructor in Mathematics, Drake University, 1902-1909; Assistant Professor of Mathematics, Drake University, 1909-1910; Professor of Methodology, Drake University, 1910-1914; Professor of Methodology, Kansas State Normal Training Normal, 1914—.

E. F. SHOLTZ,

Instructor in Commercial Subjects.

K. N. C., 1897-1898; Clinton Academy, 1898-1899; Cooper College, 1899-1900; Graduate, Gregg School, Chicago and P. B. C., Pittsburg; Principal, Ward Schools, 1904-1907; Head of Department, Pittsburg Business College, 1907-1912; Head of Commercial Department, Pittsburg High School, Pittsburg, Kansas, 1912-1914; Director of Department of Commerce, Kansas State Manual Training Normal, 1914—.

F. H. DICKINSON,

Instructor Pattern Making and Foundry.

Technical Training in Stout Institute and Pittsburg Manual Training Normal; four-year apprentice at Topeka, Kansas, in Santa Fe Shops; Twelve years consecutive service with Santa Fe Railroad Company; Two years in service of the Smith Automobile Company, Topeka, Kansas; Two years in the employ of the Chalmers Machine Company, Milwaukee, Wisconsin.

ANNIE MARRIOTT, B. S.,

Instructor in Domestic Science.

Life certificate, Kansas State Manual Training Normal, 1912; B. S., State Manual Training Normal, 1914; Chicago University, Summer, 1914; Student Assistant in Domestic Science, Kansas State Manual Training Normal, 1913-1914; Assistant Instructor in State Manual Training Normal, 1914—.

VAUGHN B. CARIS, M. A.,

Assistant Professor of Mathematics.

B. A., Defiance College, 1907; Graduate Student, Defiance College, Summer Terms, 1907, 1908, 1909; M. A., Defiance College, 1909; Graduate Student, University of Chicago, Summer Quarter, 1910 and 1911; Instructor in Mathematics, Defiance, Ohio, High School, 1907-1908; Professor of Science and Mathematics, Palmer College, 1908-1909; Professor of Biology, Lenox College, 1909-1911; Assistant Professor of Mathematics, Kansas State Manual Training Normal School, 1911—.

MARGARET COVENTRY, A. B.,

Instructor Physical Sciences.

Grade Teacher, Fort Scott, 1906-1910; Life State Certificate, Kansas State Manual Training Normal, 1912; Student Assistant in Chemistry, Kansas State Manual Training Normal, 1911-1913; A. B., Kansas State Manual Training Normal, 1913; Assistant in Chemistry, Kansas State Manual Training Normal, 1913—.

J. A. G. SHIRK, M. S.,

Professor of Mathematics.

A. B., McPherson College, 1901; A. M., McPherson College, 1902; M. S., University of Kansas, 1905; Sigma Xi, University of Kansas, Iota Chapter, 1905; Graduate Student, University of Kansas, Summer Sessions, 1909, 1911; Graduate Student, University of Chicago, Summer Quarters, 1906 and 1910; Professor of Mathematics and Physical Sciences, McPherson College, 1901-1904; Fellow in Mathematics, University of Kansas, 1904-1905; Assistant Instructor in Mathematics, University of Kansas, 1905-1906; Professor of Physics and Engineering, Ottawa University, 1906-1912; Assistant Professor of Physical Sciences, Kansas State Manual Training Normal, 1912-1914; Professor of Mathematics, 1914—.

BURTON WILLIAM SCHEIB, M. A.,

Associate Professor of Agriculture.

B. A., Park College, 1908; Fellow in Botany, Curator Botanical Herbarium and Assistant in Botanical Gardens, University of Michigan, 1909-1910; Director of State Experiment Station and Professor of Agriculture, State Agricultural School, Wetumpka, Alabama, 1910-1912; Assistant Professor of Agriculture, Kansas State Manual Training Normal, 1912—.

WILLIAM EDGAR RINGLE, B. A.,

Associate Professor in Biology.

B. A., Kansas University, 1898; Student, Ottawa University, 1894-1896; Principal High School, Coffeyville, Kansas, 1898-1899; Instructor in Science and Curator of the Museum, Montgomery County High School, Independence, Kansas, 1899-1902; Author of "Student's Botany," a Spring Flora of Kansas, 1901; Superintendent City Schools, Coffeyville, Kansas, 1902-1904; Field Manager Oil Operations, 1904-1905; Superintendent Mines and Mining for the Badger Mining and Milling Company, Joplin, Missouri, 1905-1908; Practical Agriculture, 1908-1910; Department of Physical and Biological Sciences, Cherryvale High School, 1909-1913; Professor of Nature Study and Applied Biology.

ADELA ZOE WOLCOTT, PH. B.,

Assistant Professor of Domestic Science.

Diploma, American School of Home Economics, 1907; A. D. E., Lewis Institute, 1908; Ph. B., University of Chicago, 1909; Student Graduate, School of Home Economics, Summer, 1912; Head of Department of Home Economics, Colorado Woman's College, Denver, Colorado, 1909-1913; Professor of Domestic Science, State Manual Training Normal School, 1913—.

A. H. WHITESITT, B. S.,

Associate Professor in Industrial Arts.

Vincennes University, 1897; Diploma, Indiana State Normal, 1908; Bradley Polytechnic Institute and The Stout Institute, Summers, 1908-1912; B. S., Kansas State Manual Training Normal, 1917; Director of Manual Training, City Schools, East Chicago, 1908-1911; Instructor in Furniture and Cabinet Making, Emmerich Manual Training High School, Indianapolis, 1911-1913; Director of Woodworking Department, Kansas State Manual Training Normal, 1913—.

ALBA BALES,

Director of Home Economics.

Student in Chicago Normal School, 1894-1895; Teacher in Grades in Kendallville, Indiana, 1895-1896; Student Oberlin College, Oberlin, Ohio, 1896-1898 and 1902-1904; Principal of Ward City School, Kendallville, Indiana, 1898-1902; Teacher of Science and History in High School, Albion, Indiana, 1904-1907; Graduate of Pratt Institute School of Household Science and Arts, 1909; Director of Department of Home Economics, Idaho State Normal, Lewiston, Idaho, 1909-1914; Director of Home Economics, Kansas State Manual Training Normal, 1914—.

A. LEONARD LOGAN, B. S.,

Associate Professor in Industrial.

B. S. in M. E., Layfayette College, Pennsylvania, 1910; Williamson Industrial School, Pennsylvania, 1908; Foreman in Machine Shop, Lowndes & Butler, Norristown, Pennsylvania, 1910-1911; Shop Foreman, Alan Wood Iron and Steel Co., Philadelphia, Pennsylvania, 1911-1912; assistant M. E., Gibney Fire & Rubber Co., Conshohocken, Pennsylvania, 1912-1913; Instructor in M. E., Layfayette College, 1913-1914; Professor of Metal Work, Kansas State Manual Training Normal School, 1914—.

O. F. GRUBBS, A. B., B. S.,

Assistant Professor of History.

Diploma, State Normal School, 1912; Life Certificate, 1905; A. B., B. S., Kansas University, 1914; Teacher and Ward Principal in City Schools, Kansas, 1902-1906; Principal, Thayer, Kansas, 1906-1909; Superintendent, Colony, Kansas, 1909-1910; Superintendent, Neodesha, Kansas, 1910-1912; Assistant in History, Kansas State Manual Training Normal, 1914—.

RALPH EDSON GRAHAM, A. B.,

Professor of Public Speaking.

B. S., Fremont College, Fremont, Nebraska; Two Years Superintendent of Schools, Mason City, Nebraska; Graduate, Leland Powers School of the Spoken Word, Boston, Massachusetts; Principal, Summer School of Expression, Two Summers; Dean of Expression, Fremont College, One Year; Lyceum Work, New England; Post-graduate, Leland Powers School of the Spoken Word, 1914; Professor of Public Speaking and Expression, State Manual Training Normal, 1914—.

WALTER McCRAY,

Director of Music.

Student, Herman Bellstedt, World's Greatest Cornet Soloist and Band Master; Student, Harbard Brase of the Conservatory, Stockholm, in Harmony and Counterpoint; Director of Music, Nickerson Normal and High School, 1899-1900; Head of Band Department; Teacher of Harmony, Musical History, Supervisor of Model School Music, Bethany College, Lindsborg, Kansas, 1901-1903; Received First Prize at the State Musical Jubilee at Hutchinson, Kansas, in Cornet Soloist Contest, 1899; Conductor of McCray's Band, which is one of the leading organizations of the Middle West; Wide experience as Conductor of Choral Societies; Supervisor of School Music.

MRS. MYRTLE McLAUGHLIN-WILLIS,

Registrar.

Grade Teacher in Public Schools, 1901-1904; Student at Kansas University, 1904-1906; Commercial Course at Miller's Business College, Wichita, Kansas, 1913-1914; Summer of 1914 in the Office of the State Entomologist, Stillwater, Oklahoma; Registrar, State Manual Training Normal, 1914—.

MARY C. STERRETT,

Critic Teacher of Third and Fourth Grades in the Training School.

Diploma, Illinois State Normal University, Normal, Illinois, 1899; Supervisor's Diploma, Teachers' College, Columbia University, New York City, 1914; General Supply and Assistant in Supervision, Decatur, Illinois, 1907-1913; Kansas State Manual Training Normal School, 1913—.

LOUISE TUTCHER,

Critic Teacher.

Teacher, Ottawa Grades, 1900-1905; Chanute Grades, 1905-1907; Chanute Ward Principal, 1907-1912; Parsons Ward Principal, 1912-1914; State Manual Training Normal School, 1914—.

R. HESSELBERG,

Violinist.

Student of W. Besekirski, Imperial Court Violinist in Moscow, Russia; Graduate, Royal Academy of Music in Berlin, Main Subject. Violin, under Prof Dr. Joseph Joachim, 1894-1899; Private Assistant to Doctor Joachim, in Berlin, 1900-1905; Concertized in Europe, 1905-1907; Teacher of the Calhoun School of Music, Joplin, Missouri, 1907-1914; Soloist with the Minneapolis Symphony Orchestra, 1912; Chicago Symphony Orchestra, 1908; St. Louis Symphony Orchestra, 1913; Soloist of the American Guild of Violinists, in Chicago, 1912; President F. Kneisel; Member and Soloist of the Missouri Music Teachers' Associaiton, 1913.

CHAS. R. WASSER, JR.,

Instructor in Woodworking.

Graduate, Williamson Industrial School, Pennsylvania, 1908; Three Years Practical Shop Experience with Bethlehem Steel Company, Bethlehem, Pennsylvania, and Ingersoll, Rand & Co., Easton, Pennsylvania; Superintendent of Shop Work, Ursinus College, Collegeville, Pennsylvania, 1910-1912; Student, Teachers' College, Columbia University, Summers, 1908-1912; Resident Student, 1912-1913; Instructor in Mechanical English, Lafayette College, Easton, Pennsylvania, 1913-1915; Instructor in Woodworking, Kansas State Manual Training Normal School, 1915.

GERTRUDE CONCANNON,

Instructor in Piano, and Director Piano Department.

Pupil of Emil Paur, Teresa Carreno, R. M. Breithaupt, Xavier Scharwenka. She has also taught extensively in New York City and given numerous recitals there. Altogether, her work as teacher in Europe and America extends over a period of fifteen years. Miss Concannon has been identified with the musical life of Kansas City for many years, both before and since her residence abroad, and is recognized everywhere as one of the most brilliant pianists in the West.

SAMUEL J. PEASE, M. A.,

Professor of Languages.

A. B., Northwestern University, 1897; M. A., Northwestern University, 1898; Graduate Student at Northwestern, 1897-1899; Summer, 1908; Colorado, 1902-1903; Chicago, 1903-1905 (Fellow in Greek), and Summers, 1900, 1903, 1906, 1914; Instructor in Greek and Modern Languages, Hamline University, 1899-1901; History and Civics, Colorado State Preparatory School (Boulder), 1902-1903; Instructor in Greek and German to Assistant Professor of German and French, University of North Dakota, 1905-1913; Latin and German, Chicago High Schools, 1913-1915; Professor of Languages, Kansas State Manual Training Normal School, 1915—.

HARRISON C. GIVENS, B. S. IN ED., M. E.,

Director Industrial and Applied Arts, S. M. T. N.

Diploma, New York State Normal School, Courtland, 1897; M. E., Cornell University, 1901; Mechanical Engineer, 1901-1903; Director, Manual Training, Davenport, Iowa, 1903-1905; Head Technical Department, Central Y. M. C. A., Chicago, 1906-1908; Consulting Engineer, 1906-1910; Instructor, University of Chicago and University High School, 1908-1910; B. S. in Ed., University of Chicago, 1913; Director, Vocational Department, New York State Normal School, Buffalo, 1910-1915; Kansas State Manual Training Normal School, 1915—.

WINFIELD D. ARMENTROUT, A. M.,

Assistant Professor of Education, and Senior High School Advisor.

A. B., Missouri Valley College, 1910; A. M., Columbia University, 1914; Master's Diploma in Education, Teachers' College; Instructor, Chanute, Kansas, High School, 1910-1911; Instructor Fort Scott, Kansas, High School, 1911-1913; Head of Normal Training Department, Topeka, Kansas, High School, 1914; Assistant Professor of Education, State Manual Training Normal School, 1915—.

ERNEST A. BUREAU, PH. B., E. E.,

Asstant Professor, Physical Sciences.

Ph. B., Ottawa University, 1906; B. S. in E. E., Purdue University, 1915; E. E., Purdue University, 1916; Tau Beta Pi, Purdue University, 1914; Graduate Student, University of Chicago, Summers, 1908-1909; Instructor Physics and Chemistry, Ashland, Wisconsin High School, 1906-1908; Instructor Physics, 1908-1912; Head of Science Departments, Muncie, Indiana, High School, 1909-1912; Assistant Professor of Physical Sciences, Kansas State Manual Training Normal School, 1915—.

MARGARET LEAVITT,

Piano.

Pupil of Gertrude Concannon, Ella Behr; Two Years in Berlin, Pupil of Emil Paur; Ten Years' Experience as a Teacher, Accompanist and Soloist.

GRETA EULALIE SMITH, B. S.,

Professor of Domestic Art.

Special Student, University of Minnesota; Instructor in Domestic Art, Unity Settlement House, Minneapolis, Minnesota, 1902-1908; Instructor of Domestic Art, Minnesota School of Agriculture, 1908-1910; Extension Work, Minnesota, Summer, 1910; Instructor in Textiles and Clothing, College of Agriculture, University of Minnesota, 1910-1914; Student, Teachers' College, Columbia University, Summer School, 1913; Student, University of Minnesota Summer School, 1914; Student, Teachers' College, Columbia University, 1914-1915; Bachelor's Degree and Bachelor's Diploma, Teachers' College, Columbia University, 1915; Head of Domestic Art Section, Kansas State Manual Training Normal School, 1915—.

MARIE ELIZABETH SMITH, B. A.,

Instructor in Drawing and Design.

B. A., Beloit College, Beloit, Wisconsin, 1910; Teacher of English and History, North English, Iowa, 1910-1911; Teacher of English, Galesville, Wisconsin, 1911-1913; Diploma, Normal Art and Manual Training Course, Pratt Institute, 1915; Instructor, Drawing and Design, State Manual Training Normal School, 1915—.

L. LORENE BAILEY, B. S.,

Assistant in Biology.

Life Certificate, Kansas State Manual Training Normal School, 1914; B. S., Kansas State Manual Training Normal School, 1915; Laboratory Assistant, Biology, 1914-1915; General Assistant, Biology, 1915-1916.

R. O. COURTRIGHT, A. B.,

Instructor in Physical Education and Coach of Athletics.

Oklahoma University, 1914; Physical Director and Coach, Oklahoma University Preparatory School, 1914-1915; Diploma from University of Illinois, Summer School, for Athletic Coaches, 1915; Assistant Physical Director and Coach, Kansas Manual Training Normal School, 1915-1916.

EDITH BIDEAU,

Voice Instructor.

Bachelor in Music, College of Music, Baker University, 1911; Bachelor of Arts degree, Kansas State University, 1912; Postgraduate degree, College of Music, State University, 1912; Music study under special direction of Madame Kate Bemsberg-Barracchia; Concert work with Minneapolis Symphony Orchestra, two seasons; Assisted in Grand Concert, Madame Julia Rives-King, one of the world's greatest pianists; Madame Rose Olitzka, the famous Russian contralto; Edward Kreiser; Private instructor in voice, piano and concert work.

FRED DONAGHY,

Assistant Professor of Biology.

A. B., Indiana State Normal, 1914; A. M., Indiana University, 1915; Laboratory Assistant, 1910-1914, Indiana State Normal; Fellowship Indiana State University, 1914-1915; Head, department of Science, Wiley High School, Terre Haute, Indiana, 1915-1916.

MARY B. HILL,

Instructor in Commerce.

Teacher in Elementary Schools; Graduate Salt City Business College; Four years instructor Salt City Business College; Head, Commercial department, Wilcox High School, Wilcox, Arizona; Head, Commercial Department, Nickerson Normal, and Reno County High School, 1913-1916; Life Diploma State Manual Training Normal School, 1916.

WINTWORTH WILLIAMS, M. A.,

Assistant in English.

Drake University, 1903-1904; B. A., Drake University, 1904; Baritone with Meistersinger's Male Quartet, 1904-1905; Instructor, Mason City, Iowa, High School, 1908-1910; Student of Oratorio in London, Summer of 1910; M. A., Columbia University, 1911; Instructor in North High School, Minneapolis, 1911-1916; Assistant Professor of English, State Manual Training Normal School, 1916.

R. H. MARSHALL, A. M.,

Assistant Professor of Mathematics.

Taught in Public Schools of Kentucky, 1901-1905; Graduate of Western Kentucky State Normal, Bowling Green, Kentucky, 1908; Instructor in Mathematics in Western Kentucky State Normal, 1908-1912; A. B., University of Illinois, 1914; Assistant in Mathematics, University of Illinois, 1914-1916; A. M., University of Illinois, 1916; Assistant Instructor Mathematics, State Manual Training Normal School, 1916.

GERTA GRAY, M. A.,

Instructor in Home Economics.

Graduate of State Normal School, Cheney, Washington, 1910; Teachers' High School, Rosalin, Washington, 1910-1911; Teachers' High School, Sandpoint, Idaho, 1911-1913; Student Teachers' College, Columbia University, 1913-1914, M. A. degree; Instructor, University of Illinois, 1914-1916; Assistant in Home Economics Department, State Manual Training Normal School, 1916.

VIVIAN ATWOOD,

Instructor in Applied Arts.

Diploma, Applied Arts School, Chicago, Illinois, 1913; Postgraduate work, 1914; University of Chicago, Summer, 1914; Supervisor of Applied Arts, Coffeyville, Kansas, 1914-1916; Instructor in Applied Arts, State Manual Training Normal School, 1916.

EDNA IRENE WISWELL, B. A.,

Physical Director for Women.

Teacher's Certificate in Physical Education, 1912, B. A. 1914, Industrial Institute and College, Columbus, Mississippi; Assistant in Department of Physical Education, Industrial Institute and College, 1913-1916; attended Columbia University, Summer 1916; Assistant in Physical Education Department, State Manual Training Normal School, 1916.

W. W. BASS, A. B.,

Instructor in Physical Sciences.

Washburn College, 1909-1911; A. B., Kansas State Manual Training Normal, 1914; Graduate Student, University of Chicago, Summer Terms, 1914, 1916; Teacher of Physical Sciences, Fort Scott High School, 1914-1916; Assistant in Physical Sciences, Kansas State Manual Training Normal, Summer Terms, 1914-1916; Instructor in Physical Sciences, Kansas State Manual Training Normal School, 1916.

SYLVIA CAMPIGLIA, B. S.,

Assistant Professor of Domestic Art.

Graduate of San Jose State Normal, California; two Summer Sessions, San Jose State Normal, California; one Summer Session, Lewiston Normal, Idaho; B. S., Teachers' College, Columbia University; one Summer Session, Teachers' College, Columbia University; Primary Teacher, Hanford, California; Grade Teacher, San Jose, California; Domestic Art and Domestic Science Instructor, San Jose, California; Supervisor, Domestic Art and Domestic Science, San Jose, California; Instructor one Summer Session in Domestic Art, University of California, and one Summer Session at Teachers' College, Columbia.

ERNEST BENNETT, B. S.,

Instructor in Languages.

Student in Ottawa University, 1907-1908; B. S., Kansas State Manual Training Normal School, 1917; Principal, Sedan, Kansas, High School, 1904-1907; Superintendent of Schools at Severy, Kansas, 1908-1911; Superintendent of Schools at Howard, Kansas, 1911-1914; Conductor and Instructor in Normal Institutes; Member Editorial Staff of Pittsburg *Daily Headlight* two years; Instructor in Languages, State Manual Training Normal School, 1916-1917.

Special Lecturers for Summer School.

JUNE 18-23.

Dr. David Snedden, of Columbia University, formerly commissioner of education, state of Massachusetts. Doctor Snedden is one of the foremost educators in vocational, industrial and administrative education in the United States.

JUNE 11-16.

Dr. E. A. Ross, professor of sociology in the University of Wisconsin. For many years Doctor Ross has easily held first place as a sociologist in this country; a brilliant and inspiring lecturer, a fine, forceful and magnetic instructor, and a man whose entire work is of most pleasing and luminating character.

JUNE 25-30.

Dr. C. A. Prosser, director Dunwoody Institute, Minneapolis, Minn.; first secretary of the Society for the Promotion of Industrial and Vocational education; leading authority on education; was with us a week last year to the great delight and edification of all.

Dr. C. F. Hodge, professor of biology, University of Oregon. Doctor Hodge spent a week with us last summer, and it was the universal consensus that he was one of the most helpful and popular men the institution had ever secured. Doctor Hodge has a national reputation in his chosen field of biology; the author of Hodge's Nature Study; the man who takes the teachers in groups to the fields for most practical and scientific investigation and research. His excursions last summer met with great popularity.

JUNE 18-23.

Dr. May B. Van Arsdale, head of household arts and science of Columbia University, is easily the foremost woman in this field of education. Indeed, the management considers themselves unusually fortunate in being able to induce Doctor Van Arsdale to spend a week or ten days at the State Manual Training Normal School.

JULY 30 AND 31.

Dr. A. E. Winship, editor *Journal of Education,* Boston, Mass., has been with the students two to three days each session for the past three or four years. His message is so helpful, so inspiring, and his visit so genial and uplifting to all, that the summer students just vote him back year after year.

Dr. L. S. Hawkins, of the University of New York, who was with us last summer a part of the week, will also spend several days with us again during the coming Summer Session. We have Doctor Hawkins through the kindness of the State Agricultural College, where he is employed also in the Summer Session.

In addition to the special lecturers above announced, the following superintendents of Kansas will spend one to two days each with us:

J. F. Barnhill, superintendent city schools, Parsons, Kan.

John F. Hughes, superintendent city schools, Chanute, Kan.

M. E. Pearson, superintendent city schools, Kansas City, Kan.
M. E. Moore, superintendent city schools, Leavenworth, Kan.
F. L. Pinet, secretary *Kansas State Teacher*, Topeka, Kan.

A credit of two hours is given all students who attend these lectures, and make outlined reports to the instructors to whom they are assigned for such reports.

Special Assistants.

SUPT. C. S. RISDON, Education.
SUPT. JOHN F. BENDER, Normal Institute.
MARTHA TRINDER, Domestic Art.
A. B. STEELE, Biology.
JOHN BROADLICK, Mathematics.
GLENN SKINNER, Chemistry.
COUNTY SUPT. MAY CAIN, Normal Institute.
M. W. SLATTERLY, Physics.

Student Assistants.

EDWARD FLOTTMAN, Geography.
ROZELLA CROOK, Assistant in Library.
LESTER REPPERT, Printing.
L. N. PIERCE, Public Speaking.
H. R. CAREY, Public Speaking.
ALICE PALMER, Assistant in English.
EMILY GAW, Assistant in Physical Education.

Miscellaneous Information.

MATERIAL EQUIPMENT.

The Normal occupies a campus of fifty-five acres adjoining the city upon the south. This piece of land is admirably situated for our institution. It is being put into condition very rapidly. There are located upon this campus at the present time three splendid permanent buildings, and three large temporary buildings. Russ Hall, which was destroyed by fire in June, 1914, has been rebuilt and thoroughly equipped. Everything that could be done to make it a more substantial, beautiful and serviceable building has been done. This building now has seventy-five rooms, less the corridors and halls. More than three-fourths of the building is fireproof. Considerable change was made in the exterior and in the interior, especially the top floor, in this rebuilding. Our halls and corridors are beautifully tiled, and the grand stairway at the front entrance, leading to the second floor, is a work of art and beauty, being constructed of the best grade of marble. In this building all academic classes are conducted, together with the domestic science and a portion of the model-school work.

The Industrial Arts building covers more ground space than Russ Hall. In this building all work in industrial arts, including the work of domestic art, is carried on. It is equipped with the very latest and best machinery that can be had. It is well lighted and ventilated, and furnishes an opportunity for industrial arts work equaled by no other in the West.

The power and heating plant is the third of these permanent buildings. It has been designed and located with a view of using it for heating and lighting the several buildings which must soon be gathered about it to carry on the work of the institution.

Among the temporary buildings is an auditorium, which has a seating capacity of 2000, with a very large stage capacity. Here also our basket-ball court has been located, which is full regulation size, and one of the best in the state.

We have another temporary building in which the Commercial Department is at present housed. Also the cafeteria, which is capable of taking care of 600 people, is among these temporary buildings.

BOARD AND ROOMS.

The expense of boarding in private families varies from $3.50 to $5 the week.

Board in clubs costs from $3 to $4 the week, while those who do light housekeeping reduce such expense very materially.

Rooms cost, unfurnished, $2 to $5 the month; furnished, $7 to $10 the month, according to size and convenience. Unfurnished houses rent from

$6 to $18 the month. It is not necessary to engage rooms before one comes. It is more satisfactory to see the rooms before making definite engagements. An extensive list of suitable boarding and rooming places is kept on file in the general office at the school to aid students in securing favorable location. Men and women are not expected to room in the same houses. In houses where women students are rooming suitable arrangements for the use of a parlor for the reception of guests must be made.

STUDENT ORGANIZATIONS.

ATHLETIC ASSOCIATION. One of the most active organizations of the school is the Athletic Association. All of the athletic contests of the school are arranged and conducted by this organization, through the Athletic Council, which is composed of five faculty and five student members.

LITERARY SOCIETIES. There are two well-organized literary societies, each having a well furnished and equipped room for its meetings. They are the Manus Verez and Porterian Societies. Besides the literary work of these societies, they furnish frequent opportunities for the development of the social life of the student.

CHRISTIAN ORGANIZATIONS. Branches of the Young Men's and Young Women's Christian Associations are sustained for the development of the personal, social and religious life of the student.

MUSICAL ORGANIZATIONS. The principal organizations are the Male Glee Club, Polymnia Club (a girl's organization), the orchestra, and the band. These organizations are very popular, both in the school and outside. They meet regularly twice weekly for rehearsal, and during the school year present several concerts. The active membership of the organizations is necessarily limited and is chosen from the best talent of the school.

MANUALITE. The *Manualite* is published monthly during the school year by the students and Alumni of the school. There is an editorial staff of eight students, elected annually.

BAND. The student body maintains a splendid band of about thirty-five pieces. They have done excellent work the past year.

ORCHESTRA. We have an orchestra under an expert leader. The progress this organization has made since its organization is phenomenal. Students musically inclined have ample opportunity for the cultivation of their talent.

DRAMATIC ART CLUB. This organization is composed of our young people who are doing advanced work in English, and furnishes an opportunity for the cultivation of the highest type of expression. They gave one of the most enjoyable programs of the season.

DEBATING CLUB. All the students who desire to cultivate the art of debating may become members of this club. The club holds regular meetings throughout the year, and the up-to-date problems are debated pro and con. From this club come our debaters of our debate contest.

AGRICULTURAL CLUB. This club holds its meetings at noon each Wednesday, and a luncheon is served for 10 cents, and while lunching some one presents a paper or discusses some phase of agriculture. This club has been one of the most successful meeting this year. Practically all students interested in agriculture and many who are not attend these meetings.

THE DEUTSCHER VEREIN is an organization of students and faculty for the purpose of furthering interest in the study of the German language and literature. German only is spoken. It meets every Thursday noon for a ten-cent luncheon.

INDUSTRIAL ARTS SOCIETY. During the year of 1915 the instructors interested in the industrial subjects, together with a number of students who were likewise interested in these subjects, formed an organization known as the Industrial Arts Society. The purpose of such society, as stated in the constitution, is to encourage the advancement of industrial education by meeting for the discussion of industrial subjects, by the publication of such matters as may be deemed desirable, and by establishing fraternal relations among the friends of industrial education, and by granting the privilege of membership to such students as during their course have given special promise of future achievement.

WORKING FOR EXPENSES.

It is possible for many students to earn a part or all their necessary expenses. More than 100 students the past year have helped themselves in this manner.

STUDENTS' LOAN.

A movement has been started by the Women's Federated Clubs to assist worthy and needy young people in a financial way. A certain sum will be loaned to approved students at a low rate of interest.

FEES.

All fees except hospital fees are to be paid at the beginning of each semester before admission to class.

HOSPITAL. Each school year, or fraction thereof, all students in the institution pay $1 per year to be used as a fund for the care of the sick. This fee will not be refunded.

NONRESIDENT FEES. Nonresidents will pay, in addition to other fees, a fee of $25 per year, payable in advance, by terms, as follows: $10 per term of twenty weeks; $5 for summer term of ten weeks. These fees will not be refunded.

INCIDENTAL FEE. Each student will pay a fee of $3 per semester, or fraction thereof and the same for the Summer Session. Students taking work in the sciences, manual training and other training where a considerable amount of material is used individually will be charged the actual cost of the material used by them.

CORRESPONDENCE WORK. Students taking work by correspondence pay fees indicated in special correspondence circular.

MUSIC. For fees in the music department see under that head.

EXPRESSION. Private instruction, twenty lessons, $15.

COMMERCIAL STUDENTS. Students who take only the commercial subjects are classified as irregular, and are held for the payment of irregular fees, except when signed statement is made that such commercial subjects are taken in preparation for teaching.

LIBRARY SCIENCE STUDENTS. Students who take only library science subjects are classified as irregular, and are held for the payment of irregular fees. These are indicated under that head.

EXAMINATION. Students taking special final examinations pay a fee of $1 for each examination taken. Students regularly enrolled pay the regular examination fee of $1 for the privilege of taking the county examination under the supervision of the officers of the Normal School. No credit is given for certificates of enrollment in county institutes.

LATE REGISTRATION. A considerable amount of extra work and a great deal of confusion is caused by the neglect of students to enroll at the time set for that purpose, and a fee of $1 will be charged those who enroll out of time unless they present a good excuse for their delay.

REFUNDING FEES. Except as otherwise stated, the unused portion of fees will be refunded, or will be credited to the student, only in cases of protracted illness.

IRREGULAR STUDENTS. The student is irregular who takes courses more than one semester in advance of his classification, or who takes more than one course in any department, except as it can be shown that such choice of courses is conforming to the required course of study. Students who are irregular in either of these ways pay fees as indicated below. This regulation will not be construed so as to deny any person who is, for example, a Junior College student from taking any course classified as Junior College, provided he has done the work of prerequisite courses.

IRREGULAR FEES. Irregular in one subject one semester, $4.

HOSPITAL FUND. This fund is provided by the fee of $1 per year paid by all students in the college and secondary courses. It is used to pay salary of the head nurse, for such emergency hospital supplies as are necessary, and for unavoidable expenses required for proper care of the sick. The hospital fund has met with generous approval and has contributed to better general health, and to the comfort of the students.

TYPEWRITER. Students taking typewriting pay a special fee for the use of the machine.

THE SUMMER SCHOOL.

THE SUMMER SCHOOL opens immediately after the close of the school year, which will be June 4, and will continue until August 3. Practically all courses outlined in this catalogue are given either in full or part during the Summer School. Most of the students are teachers of experience who wish to prepare themselves more fully for their work. In connection with our Summer School the Crawford county normal institute will be held, in which many of the members of our Faculty will give review subjects to the students of this institute. Also many teachers desiring to advance the grade of their county certificate may carry such work as they desire to pass county examination in, and thus qualify themselves and at the same time secure credit toward a state certificate.

REGULAR LECTURE COURSE.

Under the direction of a Faculty committee a general Lecture Course is put on each year. This course is not the old time and type of lecture course. It is the policy of the committee to select the very choicest attractions to be had, thus assuring the student body of the very best talent and most desirable things from the standpoint of both entertainment and instruction.

Students are admitted to all these lecture-course attractions on the student activity ticket. Thus far the attractions selected for the coming year are:

Mme. Schumann-Heink.
S. Parkes Cadman.
Dr. E. A. Steiner.
Ralph Parlette.

At least two more attractions of equal quality will be selected; possibly three or four more.

SPECIAL FEATURES.

During the year prominent educators and leaders are invited in to lecture to the student body.

TEACHERS' APPOINTMENT BUREAU.

The Teachers' Bureau consists of a committee of the Faculty, which seeks to place each graduate of the institution in the position best adapted to his qualifications. These qualifications are determined by a careful examination of the student's complete record as shown by his work done, not only in the Training School but also in the various departments of the College. The Bureau seeks in this way to do justice to every student, and is able to give exact and discriminating information to school officials seeking teachers. During the current year the work of the Bureau has been extended to include all graduates of the College teaching in the state, with the view of giving them all possible assistance in advancing their professional interests. Full and confidential information will be sent school officials concerning candidates. It is our policy not to send out general letters of recommendation for indiscriminate use, but to recommend a candidate for the particular position that he is qualified to fill. A large number of the members of the graduating class have had considerable experience in teaching besides that obtained in the Training Department. There are among our students and graduates persons admirably fitted for the various high-school principalships and superintendencies. School authorities are invited to visit the Normal and see the students at work, and make selections of teachers after a personal interview. All letters of inquiry will receive careful attention.

EXTENSION WORK.

The State Manual Training Normal School now has a well-developed and well-organized system of extension work, which is proving of great value to teachers in service and to others contemplating entering the profession. The work is so planned that students outside the institution, under certain limitations, can pursue the same courses of study and receive the same credit as those within the institution. By this means industrious students are enabled to increase their efficiency while in service, and also reduce the time of residence required to secure completion of a course in the institution, but no amount of extension work will be accepted as a substitute for the minimum residence requirement.

The location of the Normal in the center of a network of interurban and steam railways, furnishing students and Faculty easy and rapid means of transportation, has greatly contributed to the success of this character of work. During the current year more than 700 students, teachers in service, have received instruction from the institution. Superintendents accept this work in lieu of professional work required, and speak in the highest terms of its value in improving the teaching force of the city or community.

Extension work is offered by three different methods—correspondence work, class extension, and Saturday work.

CORRESPONDENCE WORK. Where the nature of the subject matter will permit, and where extensive laboratory work is not required, courses of instruction will be offered by correspondence. The student will furnish outlines, with review topics, and furnish such other evidence that the course is mastered as the head of the department may require.

CLASS EXTENSION. Under this plan classes of twelve or more are organized and a member of the Faculty meets the class regularly every week or every two weeks at the place in which the class is organized. Outlines and reviews are required as in regular correspondence work, with the additional advantage that the student comes in personal contact with the teacher. This character of work is regarded as meeting residence requirements within prescribed limitations. This plan is proving very attractive and effective. Classes in more than thirty cities and towns have been organized the past year.

SATURDAY WORK. Courses in which laboratory work is required are offered to such students as find it possible to reach the institution on Saturday and spend the day in the laboratories. The laboratories are open and competent instructors are provided for this work.

CREDIT. The extension courses offered, as outlined above, are identical with the courses offered to students within the institution, and by the same members of the Faculty, and the student in extension work meets the same standards and degree of efficiency in his work as the student enrolled in the school, and receives the same credit for his work.

INFORMATION. A special extension bulletin, giving list of courses, credit offered, limitations of work that can be taken, and other detailed information concerning this phase of work, will be issued early in September of each year. Students interested should write directly to the Registrar for this bulletin.

AMOUNT OF WORK. No person will be permitted to carry more than four hours per semester by correspondence, class extension, or Saturday work.

EXAMINATIONS.

Students may, upon good and justifiable grounds, be permitted to take examination for entrance or advanced standing by the permission of the accrediting committee, and the head of department in which the examination is to be taken, in such subjects as may be agreed upon, it being understood that no student will be permitted to take such examinations that would in any way jeopardize the standing of the institution in its affiliated relations.

Students desiring to take examinations for advanced standing must make application at the beginning of each term.

No student will be permitted to take examinations for advanced standing or credit who is carrying the maximum amount of work either by extension, correspondence or residence.

ORGANIZATION.

SCHOOL YEAR. The school year is divided into two semesters of approximately twenty weeks each, the work of the second semester being so arranged that teachers may enter in April, after completing a seven months' term, and obtain one-half semester's credit. There is also a summer term of eight weeks.

ENROLLMENT.

While it is advisable for students who are entering to enroll at the beginning of a semester, they may, upon sufficient reason, enroll at any time. Credit, however, is not assured to those who enroll later than one week after the opening of a semester.

AMOUNT OF WORK THE SEMESTER.

A student of college grade is expected to take not to exceed seventeen credit hours of work the week, for each semester, unless a larger assignment is granted by the accrediting committee.

THE CREDIT HOUR.

For each credit hour of any course in the College the student is expected to devote himself for three hours, either in the classroom, laboratory, or outside preparation.

DIPLOMAS AND CERTIFICATES.

ONE-YEAR STATE CERTIFICATE. Students completing the Normal High School professional course are entitled to a One-year State Certificate. Regular high-school graduates who have attended the State Manual Training Normal School one-half semester and completed eight college hours of work, six of which are professional, are entitled to One-year State Certificate.

THREE-YEAR STATE CERTIFICATE. Students who have attended the State Manual Training Normal School one semester and completed thirty-two hours of college work, eight of which are professional, are entitled to a Three-year State Certificate.

LIFE CERTIFICATE FOR ELEMENTARY, TWO-YEAR AND JUNIOR HIGH SCHOOL. Students who have attended the State Manual Training Normal School one semester, and who have met the requirements of the first two years of any of the college courses—which must include English, or Public Speaking, 4 hours; Physical Education, 2 hours; Professional, 14 hours (Psychology, 4 hours; Management, 2 hours; General Methods, 2 hours; Teaching, 3 hours; History of Education or Industrial Education, 3 hours)—are entitled to a Life Certificate for Elementary Two-year and Junior High Schools.

DEGREES.

Students who have attended the State Manual Training Normal School for one year, and who have completed any of the four-year college courses, including at least 8 hours of professional work in addition to that required for the Life Diploma, will be admitted to the degree of bachelor of science in education, which degree is a Life Certificate to teach in any elementary or high schools in the state of Kansas.

No student may offer for the degree more than 20 hours in any subject in which a major is not offered.

No more than eight hours of commerce will be accepted toward a degree.

SPECIAL CERTIFICATES.

Those desiring to teach the following subjects: Manual Training and Household Arts, will be issued a Special Certicate authorizing them to teach such subject or subjects upon completion of special courses hereinafter outlined in this catalog, each of which must embrace the following: academic subjects 16, major subjects 24, minor subjects 12, education 16 hours.

By major is meant credit hours upon subjects which represent the particular department in which the candidate wishes certification to teach.

By minor is meant credit hours in subjects from any other department in which candidate is not necessarily specializing, but which he chooses as his second preference, such arrangement being made to accommodate those who may desire or be required to teach subjects outside of their department.

In cases where candidates desire to be certified to teach a minor subject or subjects, the 12 hours designated for such subjects may be considered elective, and may be chosen from any subjects in accordance with courses catalogued.

Special Certificates in Industrial and Applied Arts, and Household Arts, will be issued for a period of 3 years, and may be renewed by any normal school in Kansas for a period of 3 years, provided 30 additional hours of college work has been completed, of which 16 hours at least must have been selected from that department in which specialization is being made. The Special Certificate may be renewed a second time only upon the completion of 30 additional hours more of college work, and instead of a Special Certificate, the candidate will then have completed his full college course, and will be issued the regular bachelor of science degree in education, which will authorize him to teach any subject or subjects in any of the public schools of Kansas for life.

Those desiring to teach the following subjects: Music, Drawing, Commerce, in the senior or four-year high schools, will be issued the regular Life Diploma upon the completion of such courses as are hereinafter outlined in this catalog.

LIFE CERTIFICATE.

KINDERGARTEN CERTIFICATES. On completion of the Kindergarten Course—a course of two years, presupposing high-school graduation or its equivalent—a diploma is issued which, in accordance with a law passed by the legislature of 1907, is a certificate valid for kindergarten work in the state of Kansas.

PRIMARY CERTIFICATE. Those persons completing the two-year Primary Course will be given a Life Certificate to teach primary work.

INTERMEDIATE GRADE TEACHER'S CERTIFICATE. Those persons completing the two-year Grade Teacher's Course will be given a Life Certificate to teach in the grades.

RURAL TEACHER'S CERTIFICATE. Those persons completing the two-year Rural Teachers' Course will be given a life certificate to teach in the rural schools of the state.

One hundred twenty-eight semester hours of work are required for graduation from the degree course. Four hours of this work are in the Physical Education Department. A semester hour consists of one class period per week in a subject for one semester, except laboratory, drawing, manual and physical training subjects, in which two class periods per week for a semester constitute a semester hour.

No more than eight hours college credit of the one hundred twenty-eight will be allowed for practice courses in physical education and school organization activities.

COUNTY EXAMINATIONS.

Regularly enrolled students of the State Manual Training Normal School may, upon the payment of the usual examination fee of one dollar ($1.00), present themselves for examination for county certificates, to be conducted under the supervision of the officers of the State Manual Training Normal School, at any time when such an examination is given at any point in the state. The papers in such examination will be sent to any county designated by the applicant, there to be examined by the county board of examiners, who will issue certificates to the successful applicants under the same conditions as if the examination had been conducted under their supervision.

ELECTIVES.

Choice of electives by students should be made upon the advice of the head of the department in which the student is majoring.

NUMBERING OF COURSES.

All courses numbered 1 to 50 are open to freshmen and sophomores. Those numbered 51 to 100 are open to juniors and seniors. Any variation from the above will be upon the recommendation of the heads of the respective departments.

In the History Department courses 62 and 65 are open to all classes.

STANDING.

The State Manual Training Normal School is a fully accredited Teachers' College with membership in the North Central Association of Colleges and Universities. Such affiliated standing is of material advantage to students who desire to enter other colleges or universities. The life diplomas and degrees of the institution are being accepted as state certificates in practically every state in the Union, at least wherever a state will accept a degree or diploma from an institution in lieu of a state certificate.

UNIVERSITY OF KANSAS.

Graduates in the degree courses offering at least 120 hours of college credit, except credit from the following courses, are admitted to the Graduate School of the University of Kansas as candidates for the degree of master of science in education on the following conditions:

At least 40 hours of the 120 hours must be selected from senior college subjects.

A maximum of 30 hours will be accepted in Domestic Art, Domestic Science, and Industrial Arts.

A maximum of 20 hours in Public Speaking, and 6 hours in Commerce will be accepted.

Credit not accepted as entrance to the Graduate School for the M. S. degree from the following courses: Bookkeeping, Business Arithmetic, Penmanship, Shorthand, Business English, Typewriting, Dictation and Office Practice, Commercial Correspondence, Business Forms and Spelling, Domestic Art 1*a*, Domestic Science 1*a*, History courses 61 and 65; Music, except in School of Fine Arts, Piano, Voice, Glee Club and Chorus Work not accepted.

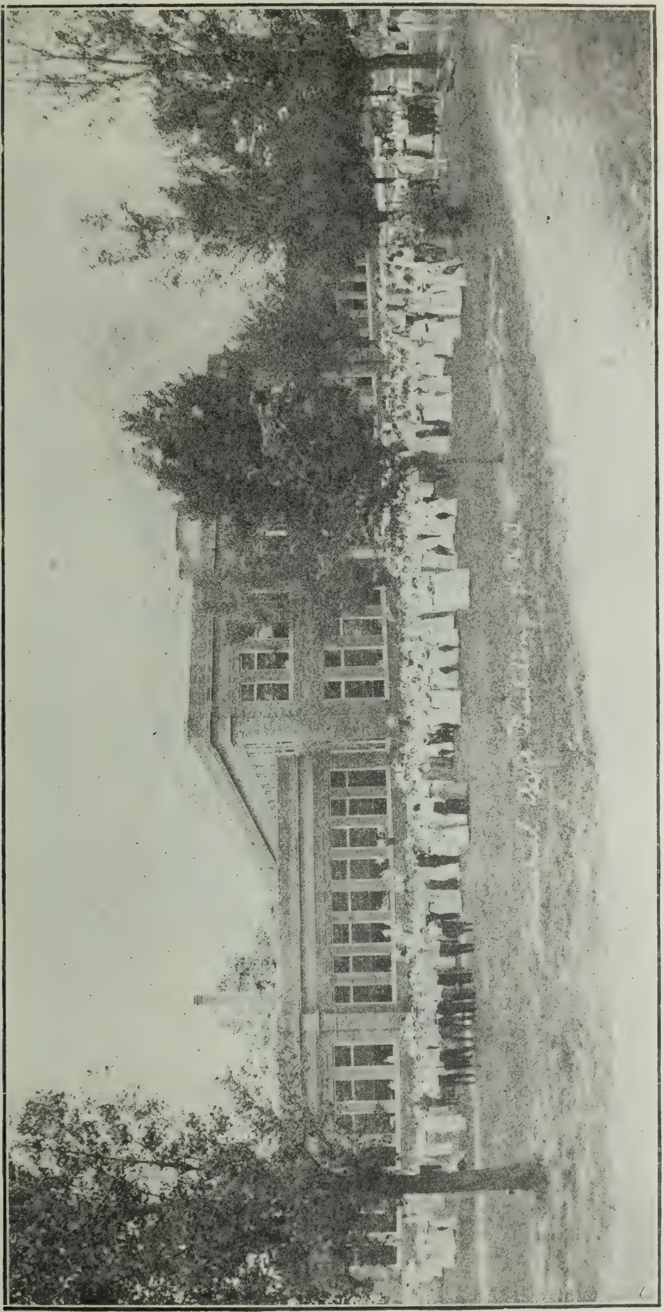
The above courses are all considered essential in the preparation of teachers for their work. They are not sufficiently advanced and of such character as to warrant their being presented as entrance credit to graduate schools.

Candidates desiring to enter the University of Kansas who have not completed the degree course of 120 hours will receive credit hour for hour for the work done in all courses in this catalog, except as above specified.

Students desiring to enter the Graduate School of the University for the master of arts degree will be given entrance credit in so far as the courses or degree presented shows substantial equivalence to the University's requirements for similar credit.

THE LIBRARY.

The library contains about 8500 volumes, *carefully selected with reference to the needs of the different departments*, besides a large number of pamphlets. The librarian and assistant are always ready to be of service to students who wish to use the library. The reading room contains a large and well-chosen list of periodicals.



INDUSTRIAL ARTS BUILDING, KANSAS MANUAL TRAINING NORMAL SCHOOL.

Normal College.

Admission.

1. High-school graduates presenting fifteen or more approved units or credits will be admitted, without examination, to the first year of the Normal College Course. (A unit is one year's high-school work, five periods per week, two periods of laboratory or shop work counting as one.)

All students should present transcript of all grades made prior to their entrance here. This includes high-school work, work done in other institutions, and teacher's certificates.

Outline of Courses by Years.

The figure immediately after the subject indicates the number of the course; explanation of the work in the subject is found under this number in the later pages of this catalogue. The other figures indicate the number of semester-hours' credit given for the course.

INDUSTRIAL ARTS COURSE.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
*Shop	4	*Shop	4
†Drawing	2	†Drawing	2
Industrial Mathematics	4	Methods and Management	4
Psychology	4	Physical Education (2)	1
Physical Education (1)	1	Industrial Education	3
Elective	1	‡Electives	2
	16		16

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
*Shop	4	*Shop	4
†Drawing	2	†Drawing	2
Departmental Methods	2	Mathematics	4
English	4	‡Electives	6
‡Electives	4		
	16		16

JUNIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
*Shop	4	*Shop	4
†Drawing	2	†Drawing	2
Industrial History 51	4	Education	4
Chemistry	4	Electives	5
Electives	1	Physical Education (6*b*)	1
Physical Education (6*a*)	1		
	16		16

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*Not less than 16 hours of shop work in the departmental major is required for Life Certificate. Not less than 20 hours of shop work in the departmental major, nor less than 8 hours in the other material, is required for the degree.

†The drawing to be taken is determined by the shop course selected and is specified by the department.

‡Practice teaching will be assigned in the term most convenient for the department and is included in the number of elective hours.

SENIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
*Shop	4	*Shop	4
†Drawing	2	†Drawing	2
Education	4	Sociology 59	4
Industrial Physics	4	Survey	2
Electives	2	‡Electives	4
	16		16

A student majoring in Industrial Arts may elect either woodwork or metal work as his departmental major, but should advise with the department before making a choice.

HOME ECONOMICS. (Course I.)

MAJOR—DOMESTIC ART.

Degree .... {D. A. 30 hrs. / D. S. 10 hrs.   Life Certificate .... D. A. 16 hrs.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Science (1)	4	Psychology (2)	4
Domestic Art (1)	3	Domestic Art (2)	3
Drawing (5)	2	*Domestic Science (2)	4
*Chemistry (beginning *1 or History (5) or 1 and 2)	4	Biology (8), (Physiology)	4
English or Public Speaking	4	Physical Education (2)	1
Physical Education (1)	1		16
	18		

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Art (3), Textile	2	Domestic Art (6)	4
Domestic Art (4), Drafting	2	Drawing (22)	2
Domestic Art (5), Spec. Meth	2	Teaching (30)	2
Drawing (9)	2	History of Education	3
Teaching (29)	2	Methods	2
Management (1)	2	Elective	2
Electives	1		15
Drawing (26)	2		
	15		

JUNIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Art (7)	4	Domestic Art (8b)	2
Chemistry (6 and 7), (Tex. and Household),	4	Drawing (25)	2
History (51), (Indus.)	4	Biology (5), (Hort.)	2
Drawing (9)	2	Education	4
Physical Education (3)	1	Electives	5
Electives	1	Physical Education (4)	1
	16		16

SENIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Art (9)	4	Domestic Art (11)	4
Household Physics	2	Sociology (58)	4
Teaching (31)	2	Electives	6
Electives	4	Domestic Science (54)	2
Education	4		16
	16		

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*Not less than 16 hours of shop work in the departmental major is required for Life Certificate. Not less than 20 hours of shop work in the departmental major, nor less than 8 hours in the other material, is required for the degree.

†The drawing to be taken is determined by the shop course selected and is specified by the department.

‡Practice teaching will be assigned in the term most convenient for the department and is included in the number of elective hours.

*(1) Students not offering a unit of chemistry from high school will be required to take it in this course.

*(2) Students wishing a three-year certificate must substitute teaching and management or domestic science 2.

HOME ECONOMICS. (Course II.)

MAJOR—DOMESTIC SCIENCE.

Degree	D. S. 30 hrs. D. A. 10 hrs.	Life Certificate	D. S. 16 hrs. D. A. 8 hrs.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Science (1)	4	Psychology (2)	4
Domestic Art (1)	3	†Domestic Art (2)	3
*Chemistry or History (1)	4	†Drawing (5)	2
English or Public Speaking	4	Domestic Science (2)	4
Physical Education (1)	1	Biology (5), (Physiology)	4
		Physical Education (2)	1
	16		18

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Art (3)	2	Domestic Science (5)	4
Domestic Science (3 and 4)	3	Bacteriology (3)	4
Chemistry of Foods (5)	4	Teaching (30)	2
Teaching	2	History of Education	3
Management (1)	2	Electives	2
Methods	2		
	15		15

JUNIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Science (51)	2	Domestic Science (52)	4
Biology (4-6)	4	Drawing (22)	2
Household Physics	2	Chemistry (62 and 63)	4
Physical Education (6*a*)	1	Horticulture	2
Electives	7	Electives	3
		Physical Education (6*b*)	1
	16		16

SENIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Science (53)	4	Domestic Science (54)	2
Education	4	Biology (7)	2
Teaching	2	Sociology (58)	4
Electives	6	History of Education	4
		Electives	4
	16		16

HOME ECONOMICS. (Course III.)

Course for those desiring degrees with 20 hours Domestic Art and 20 hours Domestic Science, having received a Life Certificate in Domestic Art. (16 hours D. A. and 8 hours D. S.)

JUNIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Science (3 and 4)	4	Domestic Science (5)	4
Domestic Art (7)	4	Drawing (24)	2
Chemistry of Foods (5)	4	Bacteriology (3)	4
Drawing (10)	1	Electives	5
Physical Education	1	Physical Education	1
Electives	2		
	16		16

SENIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Science (6)	4	Industrial History (51 or 58)	4
Household Physics	2	Education	4
Teaching (31)	2	Electives	8
Electives	8		
	16		16

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*Students not offering a unit of chemistry from high school will be required to take it in this course.

†Students wishing three-year certificates may substitute teaching (30) and management (1).

HOME ECONOMICS. (Course IV.)

Course for those desiring degree with 20 hours Domestic Science and 20 hours Domestic Art, having received a Life Certificate in Domestic Science. (16 hours D. S. and 8 hours D. A.)

JUNIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Science (6)	4	Domestic Art (6)	4
Domestic Art (4)	2	Drawing (26)	2
Domestic Art (5)	2	Drawing (24)	2
Drawing (9)	2	Electives	7
Household Physics	2	Physical Education (6*b*)	1
Physical Education (6*a*)	1		16
Electives	3		
	16		

SENIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Art (7)	4	Industrial History (51 or 58)	4
Chemistry (60 and 61), (Text. and House.),	4	Education	4
Teaching (31)	2	Electives	8
Electives	6		16
	16		

Students desiring a Life Certificate in Domestic Science may elect in course II instead of Domestic Art.

Those students desiring a Life Certificate in Domestic Art may elect course I instead of Domestic Science.

GENERAL COURSE.

For the preparation of high-school teachers majoring in Biology, English, Education, Foreign Languages, History, Mathematics or Physical Science.

Students expecting to receive a Life Certificate at the end of the second year of this course must offer at least 16 hours and not more than 20 hours in his major, 12 hours in a minor, 14 hours Education, 4 hours English, 2 hours Physical Education, and not more than 8 hours in any other department.

FRESHMAN YEAR.

**First term:*	*hrs.*	*Second term:*	*hrs.*
Biology	4	Psychology (2)	4
English	4	Major	4
History (2 or 1 and 2, or 3 and 4)	4	Physical Education (2)	1
†Physical Science	4	Electives	6
Mathematics	4		15
Foreign Lanaguage	4		
Physical Education	1		

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Management (1)	2	History of Education	3
General Methods (4)	2	Major	4
Major	4	Electives	9
Electives	8		16
	16		

JUNIOR YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Education	4	Major	4
Major	4	Electives	11
Electives	7	Physical Education (6*b*)	1
Physical Education (6*a*)	1		16
	16		

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*Elect seventeen hours, one of which must be Physical Education.

†Chemistry, Geology, Physics, or Physiography.

SENIOR YEAR.

First term:	*hrs.*
Teaching	4
Major	4
Electives	8
	16

Second term:	*hrs.*
Major	2
Electives	14
	16

Courses of instruction are organized into ten groups, with special emphasis on a different subject called the major subject in each group. A course comprising two years' work is provided for those preparing for grade positions. Thirty semester hours of work in a subject constitute a major in that subject. Students wishing to graduate from the degree course must elect one of the groups not later than the Junior year.

COURSE GROUPS.

1. MANUAL TRAINING:	*hrs.*
Manual	36
Professional	22
English	4
*History	8
Mathematics	8
Physical Sciences	8
Physical Education	4
Drawing	16
Elective	22

2. DOMESTIC SCIENCE:	
Domestic Science	30
Professional	22
Biology	16
Physical Sciences	14
English	4
History	4
Physical Education	4
Elective	34

3. DOMESTIC ART:	
Domestic Art	30
Professional	22
Biology	7
Chemistry	10
English	4
History	8
Physical Education	4
Drawing	8
Elective	35

4. BIOLOGY:	
Biology	30
Professional	22
English	8
History	8
Mathematics	4
Physical Sciences	8
Physical Education	4
Elective	44

5. PHYSICAL SCIENCES:	
Physical Sciences	30
Professional	22
Biology	8
English	4
History	8
Mathematics	8
Physical Education	4
Elective	44

6. HISTORY:	*hrs.*
History	30
Professional	22
Biology	8
English	12
Mathematics	4
Physical Sciences	8
Physical Education	4
Elective	40

7. ENGLISH:	
English	30
Professional	22
Biology	8
History	12
Mathematics	4
Physical Sciences	8
Physical Education	4
Elective	40

8. MATHEMATICS:	
Mathematics	30
Professional	22
Biology	4
English	4
History	8
Physical Sciences	8
Physical Education	4
Elective	48

9. FOREIGN LANGUAGE:	
Language	30
Professional	22
English	12
*History	8
Mathematics	4
Physical Sciences	4
Biology	4
Physical Education	4
Elective	40

10. PROFESSIONAL TRAINING:	
Education	36
History	8
Physical Science	4
Biology (1), (7), (8)	10
English (1), (5), (6)	12
Physical Education	4
†Elective	54

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*Those students who do not offer ancient history from high school must elect it.

†At least 20 hours in some department.

SPECIAL COURSES.

Students who are not high-school graduates, having taught successfully for five years and holding a First-grade County Certificate, may receive a Three-year Certificate on completion of the first year of the Kindergarten, Primary, Intermediate Grade Teachers' or Rural Teachers' courses and eight additional hours, or a Life Certificate on completion of the two-year courses above mentioned and sixteen additional hours chosen from the following subjects:

	hrs.		*hrs.*
General Chemistry	4	General Biology	4
German or French	8	History	4
Sociology	4	Economics	4
Mathematics	4	Home Economics	8
Industrial	8	Agriculture	4
Physics	4	English	4
Commerce	4	Education	4
Physiography	4		
Library Methods	1		

KINDERGARTEN TEACHERS' COURSE.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
English or Public Speaking	4	General Psychology	4
Physiology	4	Teaching	4
Drawing (3)	2	Music	2
Physical Education (1)	1	Primary Geography	2
Music	2	Stories and Literature	2
Electives	3	Physical Education (2)	1
		Electives	1
	16		16

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Drawing	2	Child Psychology	2
Teaching	4	History of Education	3
History (American) 6	4	Nature Study	2
Management	2	Primary Teaching	2
Primary Methods	2	Kindergarten Theory	4
Elective	2	Electives	3
	16		16

PRIMARY TEACHERS' COURSE.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
English or Public Speaking	4	General Psychology	4
Physiology	4	Drawing (8*b*)	2
Drawing (3)	2	Physical Education (2)	1
Physical Education (1)	1	Management	2
Primary Methods	2	Primary Methods	2
Music	2	Music	2
Elective	1	Electives	3
	16		16

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Child Psychology	2	History of Education	3
History (American) 6	4	Stories and Literature	2
Physiography	4	Nature Study	2
Kindergarten Teaching	2	Primary Geography	2
Electives	4	Primary Teaching	3
		Play and Playground	2
		Electives	2
	16		16

INTERMEDIATE GRADE TEACHERS' COURSE.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
English or Public Speaking	4	General Psychology	4
Physiology	4	Physiography	4
Drawing (8*b* and 8*a*)	4	Music	2
Physical Education (1)	1	Physical Education (2)	1
Electives	3	Stories and Literature	2
		Electives	3
	16		16

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
History (American) 6	4	Handicraft	2
Teaching	3	History of Education	3
Nature Study	2	Play and Playground	2
Methods	2	Nature Study	2
Management	2	Special Methods	4
Electives	3	Electives	3
	16		16

RURAL TEACHERS' COURSE.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
English or Public Speaking	4	English or Public Speaking	4
Physiology	4	Psychology	4
Occupational Work	2	Nature Study	2
Nature Study	2	General Elementary Science	2
Management and Methods	4	Agriculture	2
Physical Education (1)	1	Physical Education (2)	1
	17		15

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Domestic Science or Shop	4	Domestic Art or Shop	4
Public School Music	2	Industrial History (51)	4
General Agriculture	4	Applied Art	2
Applied Art	2	Electives	6
Electives	4		
	16		16

INDUSTRIAL PHYSICS COURSE.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Chemistry	4	Psychology	4
Industrial Mathematics	4	Plumbing and Pipe Fitting (Physics 15)	2
Physical Education (1)	1	Physical Education (2)	1
Electives	7	Electives	7
		Gas Engines (17*a*)	2
	16		16

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Management (1)	2	History of Education	3
General Methods	2	Gas Engine, (Electricity 18*b*)	2
Physics (16), Electric Wiring	2	Physics (2), Electric Wiring	2
Physics (18)	4	Teaching	3
Electives	6	Electives	6
	16		16

DRAWING SUPERVISION.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Elementary Arts (3)	2	Elementary Design (5)	2
History of Art (2)	1	History or Ornament (6)	2
Elementary Drawing (1)	1	Charcoal (17)	1
English or Public Speaking	4	Clay Modeling	2
Management (1)	2	Psychology (2)	4
Drawing (10)	2	Electives	4
Physical Education (1)	1	Physical Education (2)	1
Electives	3		
	16		16

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Advanced Arts (8)	4	Applied Design (10)	2
Theory of Color (9)	2	Art Appreciation (11)	2
Woodwork	2	Water Color (12)	2
Drawing (24) or (26)	2	Organization of Drawing	2
Teaching (29)	2	Teaching	2
Electives	4	Electives	6
	16		16

COMMERCE COURSE.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Bookkeeping (1)	4	Bookkeeping and Accounting (2)	4
Business Arithmetic (3)	4	Business Arithmetic (16)	2
Commercial Geography (5)	2	Business Law (4)	2
Penmanship (6)	1	Penmanship (7)	1
Electives	4	English I	4
Physical Education (1)	1	Electives	2
		Physical Education (2)	1
	16		16

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Shorthand (8)	4	Dictation and Office Practice (9)	4
Business English (12)	2	Commercial Correspondence (13)	2
Commercial Methods (14)	1	Salesmanship (15)	2
Typewriting (10)	2	Typewriting (11)	1
Electives	3	Electives	7
Public Speaking (1)	4		
	16		16

Students who are high-school graduates or equivalent, upon completion of the above course in Commerce, and who elect Psychology 4 hours, Methods and Management 4 hours, History of Education 3 hours, and Practice Teaching 3 hours, will be entitled to a Life Certificate in Commerce. Those who do not desire a Life Certificate in Commerce, see course on page 45. Students pursuing degree courses may elect 8 hours of commerce work.

PUBLIC SPEAKING AND EXPRESSION.

FIRST YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Public Speaking (1), elective	4	Public Speaking (2)	4
Expression (3)	4	Interpretative Forms (5)	4
Literary Interpretation (4)	4	Shakespearean Text (6)	4
Debate (11), elective	1	Debate (11), elective	1
Physical Education (1)	1	Physical Education (2)	1
Electives	2	Electives	2
	16		16

SECOND YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Expression (51)	4	Art and Life Lectures (53)	2
Masterpieces (54)	4	Modern Drama and Poetry (56)	4
Electives	8	Electives	10
	16		16

Students who are high-school graduates, or equivalent, upon completion of the above course, and who elect 14 hours of professional training are entitled to a Life Certificate. To these students the department advises choice of an elective in place of course 1.

OUTLINE OF AGRICULTURE COURSE.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Agronomy	4	Animal Husbandry	4
English or Public Speaking	4	Psychology	4
Chemistry or Biology	4	Biology II	4
Manual	4	Methods and Management	4
Physical Education (1)	1	Physical Education (2)	1
	17		17

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Soils and Fertilizers	4	Agriculture	4
Education	4	Teaching	3
Elective	7	History of Education	3
		Electives	5
	15		15

The student is expected to elect enough hours in some other subject to enable him to teach in some other field.

MUSIC SUPERVISORS' COURSE.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Expression	4	History of Music (1 day)	1
Sight Singing (4 days)	2	Psychology	4
History of Music (1 day)	1	Voice	2
Voice	2	Piano	2
Piano	2	Harmony (2 days)	2
Physical Education (1)	1	Teaching 5, Lectures (1 day)	2
Teaching 5, Lecture (1 day)	2	Physical Education (2)	1
Harmony	2	Management	2
	16		16

SOPHOMORE YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Voice	2	Voice	2
Piano	2	Piano	2
Harmony	2	Counterpoint	2
Electives	4	Chorus and Orchestra Conducting	2
Orchestration	2	History of Education	3
Chorus and Orchestra Conducting	2	Electives	5
Special Methods	2		
	16		16

PHYSICAL EDUCATION.

FRESHMAN YEAR.

First term:	*hrs.*	*Second term:*	*hrs.*
Biology (1)	4	Biology (2)	4
English (1) or Public Speaking (1)	4	Chemistry	4
History (2 or 1 and 2 or 3 and 4)	4	History (1 and 2), or Sociology (58)	4
Chemistry (1)	4	Psychology	4
Physical Education (1)	1	Physical Education (2)	1
	17		17

SOPHOMORE YEAR.

First term:	*hrs.*
Biology (3)	4
Methods and Management	4
Physical Education (8)	4
Physical Education (3)	2
Physical Education (6*a*)	1
	15

Second term:	*hrs.*
Biology (8), (Physiology)	4
History of Education	3
Teaching	3
Child Psychology	2
Physical Education (4)	2
Physical Education (6*b*)	1
	15

Biological Sciences.

BIOLOGY.

There has developed within recent years a demand for better and more universal biological instruction. With the introduction of agriculture and domestic science into our schools, a knowledge of biology is demanded of a much larger number of individuals. For a long time biology was taught for its general cultural value or in its application to medicine; and to-day most of the courses in colleges and universities, and in some normal schools, are organized to meet the needs of the general student or the student of medicine. Teachers of biology have failed to realize that the mass of biological instruction from now on must be largely designed for students in agriculture, domestic science, education, and medicine, and the courses must be so constructed as to meet the special needs of these students.

It is the plan and purpose of the Department of Biology to offer instruction in biology as it applies to these fields; and many of the courses organized are especially for the student of domestic science, agriculture, or education. There are, however, a few courses of a general nature, but they are fundamental to any education.

The laboratories are well equipped to give the courses offered in biology. The equipment consists of forty new compound microscopes, with fifteen oil immersions, dissecting microscopes, prepared microscopic slides for histologic embryology and bacteriology, some four hundred lantern slides for demonstrations, microtomes, ovens, glassware and stain for histological studies, and incubators, sterilizer and glassware for cultural work in bacteriology, aquaria and vivaria for the study of living specimens in the laboratory. Also in connection with the department there is a greenhouse where students can carry on experiments in plant growth, propagation and plant breeding. The school has recently purchased thirty-five acres of ground on which there are large ponds. Here the students can study a great many of the native plants and animals in their natural habitat.

Course 1.—GENERAL BIOLOGY.

This course is an introduction to the other biological sciences, and aims to acquaint the student with the elementary forms and forces of living nature. Here the student gets his first glimpses of the laws of evolution and heredity as they apply to human progress. Much attention is paid to the evolution of conduct of life. Types for study are selected as far as possible from the common animals. Four hours credit.

Course 2.—GENERAL BIOLOGY (continued).

In this course the student studies the laws of growth and reproduction of living organisms as they are illustrated in plants. Here emphasis is given to the economic phases of botany. Plants are studied in their relation to medicine, textiles, lumber, ornamentation and food production. Attention is given to propagation and distribution. Four hours credit.

Course 3.—INVERTEBRATE ZOÖLOGY.

In this course a series of forms representative of all the phyla of the invertebrates are studied. The emphasis is placed on morphology, life history and behavior. Prerequisite, course 1 or its equivalent. Credit four hours.

Course 4.—VERTEBRATE ANATOMY.

A study of the comparative anatomy of a few representatives of the vertebrate. Dissection of one or two types from each group constitutes the laboratory work. Prerequisite, course 1. Four hours credit.

Course 5.—MORPHOLOGY OF THALLOPHYTES AND BRYOPHYTES.

A course in which the morphology, classification and genetic relationships of groups of plants representative of the algæ, fungus, moss and liverworts are studied. Some attention is given to collection and preserving of the representatives of these groups in the country about the Normal. Prerequisite, course 2 or its equivalent. Four hours credit.

Course 6.—MORPHOLOGY OF PTERIDOPHYTES AND SPEMATOPHYTES.

A continuation of course 5, into the higher groups of plants. Special attention will be given to life histories and classifications. Prerequisite, course 2 or its equivalent. Four hours credit.

Course 11.—HUMAN PHYSIOLOGY.

The purpose of this course is to teach those things that will enable the student to make of his or her body, and also the bodies of those they minister to, the most efficient mechanism possible. The requirements of the body as to food, exercise, sleep, fresh air, bathing, etc. The physiological requirements of children, where they differ from the adult, will be emphasized. The physiology of reproduction will receive the attention it deserves. Daily for twenty weeks. Four hours credit.

Course 12.—NEUROLOGY.

A study of the gross anatomy, physiography and microscopic structure of the nervous system of the vertebræ. Two hours credit.

Course 13.—NUTRITIONAL PHYSIOLOGY.

As the name implies, the course gives special attention to the physiology of nutrition. It covers about the same field as the first half of course 11, but goes much more into detail, and has more extended laboratory work. Not open to those who have had course 11. Four hours credit.

Course 14.—NATURE STUDY.

This course is designed especially for primary and grade teachers. It attempts to answer the question, What knowledge of living form is adapted to children between the ages of six and fifteen? A review of the literature in this field is also given. Four hours credit.

Course 15.—GENERAL BACTERIOLOGY.

This course is required of all students who major in domestic science or agriculture, and is open to any student in the College course. It is a general introductory course consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit. Fall, spring and summer terms.

Course 51.—HOUSEHOLD BACTERIOLOGY—HOME SANITATION.

Bacteria, mold, mildew and yeasts are studied and the part they play in cooking and canning discussed. Bacterial diseases will receive attention, and rules for the use of disinfectants and antiseptics will be given. The simple treatment of wounds will have a place. Required of all domestic science students. Two hours credit.

Course 52.—AGRICULTURAL BACTERIOLOGY.

Bacteriology as applied to the activities of the farm. Special attention will be given to soil and dairy bacteriology. Required of all agriculture students. Two hours credit. Spring and summer terms.

Course 53.—GENETICS.

The course is especially designed for domestic science students, but is open to all students of college grade. A careful review of the literature on heredity and eugenics is given, together with a study of the law of reproduction. Two hours or four hours credit.

Course 54.—HISTOLOGY AND EMBRYOLOGY.

This is a laboratory course in which the student is given an opportunity to make preparations of the animal tissues and to study their microscopical structure. Six weeks is devoted to the chick embryo. Two or four hours credit.

Course 61.—PLANT PHYSIOLOGY AND PATHOLOGY.

This is the study of the principal life functions of plants, such as photosyntheses, respiration, transpiration, growth and reproduction.

The diseases of the orchard, farm and garden plants are studied in this course. Students become acquainted with these diseases and the best methods of prevention. Lectures and laboratory work. Four hours credit. Fall term.

Course 62.—SYSTEMATIC ZOÖLOGY.

A classification of the different groups of animals of the state. By appointment only. Four hours credit. Prerequisite, course 1 or 2 equivalent.

Course 64.—HISTORY OF BIOLOGY.

A study of the history of biology from the times of the Greeks to the present. The part different people and individuals have played in developing the science is noted. Required of all students majoring in biology, but open to any College student who has twelve or more hours in biology.

Course 65.—SOCIAL BIOLOGY.

In this course the part biology has played in the development of the race is studied, especially the relation of biology to medicine, agriculture and education is emphasized. There are five books to be read and reviewed. Four hours credit.

Course 66.—BIOLOGY AND SECONDARY EDUCATION.

With the introduction of courses in agriculture, domestic science and education into the high school, biology takes a new place in this field of education. This course discusses the nature and scope of the work in biology in the high school, and relates it to these allied subjects. Two or four hours credit.

AGRICULTURE.

The work of this subject is conducted by means of textbook study, reference work, lectures, demonstrations, observation of field work, laboratory experiments, practical work in the school gardens and at the experiment stations. The experiment stations consist of about thirty-five acres, devoted to various experiments and tests that have special value to the teachers and farmers in this section of the country. Through the affiliation of other departments practical courses in farm blacksmithing, farm carpentry, gas engines and farm mechanics have been worked out to meet the needs of those specializing in agriculture. The following courses are offered:

Course 1.—Rural School Agriculture.

This course is designed to meet the needs of those who are preparing to teach in the grades and rural schools. Practical experiments and demonstrations will be outlined for each grade. First semester; one hour lecture, four hours laboratory and field. Two hours credit.

Course 2.—General Agriculture.

A course in which general service of the whole field of agriculture is taken. This course is planned especially for the students who wish a general introduction to this great industry. While Biology 1, 2 or 12 is desirable as a prerequisite, it is not necessary. Four hours credit.

Course 3.—Vegetable Gardening.

Principles and practices used in growing vegetables. Special attention is given to the home garden. The scoring, marketing, canning of vegetables is given special emphasis. The work has been arranged to meet the needs of those specializing in Domestic Science and Agriculture. Second semester; two hours lecture, two hours laboratory and field. Two hours credit.

Course 51.—Horticulture and Farm Forestry.

This course gives the student a general survey of the field of fruit and truck growing, gardening and forestry. Much of the work will be done in the field. Spring and summer terms. Four hours credit.

Course 4.—Agronomy.

Lectures and recitations on the history, production, cultivation, harvesting and marketing of farm crops. The laboratory work and field work will consist of a study of all crops adapted to this region and judging of different cereals. First semester; two hours lecture, four hours laboratory. Four hours credit.

Course 5.—Soils and Fertilizers.

Soils are studied as to origin, kind and fertility. Much attention is given to the question of how to keep soils productive and how to keep soils to a high state of production. Twenty weeks. Four hours credit.

Course 52.—Poultry Culture.

A general course dealing with poultry houses, yards, etc., fattening and marketing, description of breeds and varieties of poultry. Two hours lecture, four hours laboratory. Four hours credit.

Course 6.—Animal Husbandry.

This course includes what is usually given in more extensive courses, much attention being given the subjects of breeds and types of farm animals, stock judging, feeds and feeding, and care and diseases of animals. In it the student becomes acquainted with the things necessary to intelligent management of stock on the farm. Two hours lecture, four hours laboratory. Four hours credit.

Course 53.—FARM DAIRYING AND BUTTER MAKING.

A brief course in the composition of milk and milk products, the use and care of cream separators, the handling of cream, and the manufacture of butter on the farm. Instruction will also be given in the care and feeding of dairy cows and raising dairy calves. Spring and summer terms. Two hours credit.

Course 7.—FARM MANAGEMENT.

Selection of farms; various systems of farming; investment of capital; scoring of farms in the community; farm layout; labor; details, marketing, farm accounting. Four hours credit.

Course 8.—METHODS IN AGRICULTURAL EDUCATION.

The origin and development of agricultural education, especially for teachers preparing to teach in rural and secondary schools. In this course the best methods and materials for the teaching of agriculture will receive careful attention. Practice will be given in outlining agricultural courses. Required of all students preparing to teach agriculture. Prerequisite, ten hours in Agriculture. Two hours credit.

Course 9.—AGRICULTURE CLUB.

The Agriculture Club meets regularly on Wednesday, at the noon hour. Here the best articles from the leading agriculture magazines and periodicals are reviewed and discussed. A light luncheon is served, and this work is of special value to those preparing to teach agriculture. Open to all agriculture students. For this work one-half hour's credit each semester is allowed.

Commercial Teachers' Course.

Because of the great demand for commercial teachers, due to the fact that so many high schools and other schools are putting in the commercial course, and that the standard of commercial teachers might be raised, this course is planned.

FIRST YEAR.

Course 1.—BOOKKEEPING.

Double-entry drills. Thorough drill in application of laws of debit and credit. Handling of checks, notes, drafts, and other business vouchers. Opening and closing entries of partnership accounts. First semester. Four hours credit.

Course 2.—BOOKKEEPING AND ACCOUNTING.

Consignments, corporation accounts. Manufacturing and trading accounts. Practical problems. Prerequisite, course 1. Second semester. Four hours credit.

Course 3.—BUSINESS ARITHMETIC.

The general principles of arithmetic applied in actual business problems of lumbering, and all practical measurements. Interest and discount, taxes and insurance, commercial discount, and profit and loss, and, in fact, all practical applications of percentage. First semester. Four hours credit.

Course 4.—Business Law.

Utility of the subject. Sources and authority of our laws. Contracts, bailments, sales, negotiable instruments, credits, and loans, guaranty and surety, agency, partnership, insurance and corporations. Second semester. Two hours credit.

Course 5.—Commercial Geography.

This course is organized to give the student a scientific knowledge of the three distinctive sets of controls—the natural, the human, and the economic. It correlates not only with the other commercial courses, but with the industrial subjects as well. First semester. Two hours credit.

Course 6.—Penmanship.

Movement drills. Study of letter forms. Home work. First semester. One hour credit.

Course 7.—Penmanship.

Continuation of study of forms. Developing of rapid business hand. Home work. Second semester. One hour credit.

English 1.—See English course.

SECOND YEAR.

Course 8.—Shorthand.

Complete the Gregg Manual. Special study of form and movement. Some dictation. First semester. Four hours credit.

Course 9.—Dictation and Office Practice.

Special drills. Actual office practice. Care of faculty correspondence. Speed of 125 words, new matter. Prerequisite, course 8. Second semester. Four hours credit.

Course 10.—Typewriting.

Complete Ross Method. One hundred charts and finger exercises. First semester. Two hours credit.

Course 11.—Typewriting.

Speed drills. Copy work, 60 words per minute, perfect work. Prerequisite, course 10. Second semester. Two hours credit.

Course 12.—Business English.

The application of technical grammar. Thorough drills in punctuation, construction, business phrases and choice of words. First semester. Two hours credit.

Course 13.—Commercial Correspondence.

Laws and rules governing correspondence, postal laws, letter forms. Writing of actual business letters. Second semester. Two hours credit.

Course 14.—Methods.

This course deals with the pedagogical and professional phase of commercial work. The fundamental theory underlying the subjects of the curriculum is emphasized and shown by concrete illustrations. Special methods of instruction, problems and difficulties peculiar to the teaching of each subject, presentation of subject matter, content and arrangement of material, organization and administration, are carefully discussed. The work is conducted by means of recitations, reference reading, lectures, and written reports. First semester. One hour credit.

Course 15.—SALESMANSHIP.

Applied psychology in the art of selling. Viewpoint of salesman and purchaser is studied. Study of charactertistics that make a good salesman.

Course 16.—BUSINESS ARITHMETIC.

A more extended study of exchanges, rate sheets, bond tables, equation, and storage. Course 3 a prerequisite. Two hours credit.

Domestic Art.

Course 1*a*.

Eight hours laboratory, one hour outside work per week. This is a general preparatory course for students who have had no domestic art in the high school. It covers all the fundamental elements of sewing and gives practice in applying them upon simple garments and dresses. (Limited sections.) Three hours credit.

Course 1*b*.

Eight hours laboratory, one hour outside work per week. This is a regular College course in garment making, handwork and outergarment making. The use and making of demonstration material is emphasized and a good deal of time is spent upon the proper presentation of domestic art problems in the grades and high school. Prerequisite, high-school domestic art course. (Limited sections.) Three hours credit.

Course 2.

Eight hours laboratory work, one hour outside work. This course deals with the simple problems of cutting, fitting and alteration of commercial patterns. Special attention is given to the making and use of demonstration material. A wash dress, a tailored middy and a tailored linen dress are made. Prerequisite, course 1. Three hours credit.

Course 3.—TEXTILES.

Sophomore year. Lectures, five hours per week. Outside work, reading and special problems, seven hours per week. This course presents the foundation principles of the textile industry, special emphasis being placed upon early methods as an interpretation of the present methods of manufacture. The student is prepared to present this work in a graphic way and to become an intelligent judge of the quality and suitability of the various fabrics used for personal and household purposes. Four hours credit.

Course 4.—DRAFTING.

Straight-line drafting is taught in this course. Pattern making, simple designing, the altering and adjusting of patterns to various types of forms are studied. Two hours credit.

Course 5.

Two hours recitation per week. Lectures, assigned readings, practical work. This course deals with the teaching of domestic art in grammar and high school. This course should be taken before practice teaching is done. Two hours credit.

Course 6.—DRESSMAKING.

Sophomore year, second semester. Ten hours laboratory work, two hours outside work per week. Commercial patterns, the proportions of the human form, the application of the principles of design and color to the gown, and the finishing of waists and gowns are studied in this course. The projects are a waist, a woolen or worsted dress, and a graduation gown. Prerequisite, course 4. Four hours credit.

Course 51.—DESIGNING AND DRAPING.

Junior year, first semester. Ten hours laboratory work, with two hours outside work per week. This course provides instruction in advanced drafting and designing. Waists, skirts, sleeves and gowns are designed from foundation drafts, and more elaborate designs are draped on the form, cheesecloth and other inexpensive materials being used. No garments are made, but an invaluable knowledge of line and proportion is gained. Prerequisite, course 4. Four hours credit.

Course 52.—EMBROIDERY AND NEEDLEWORK.

Junior year, second semester. Four hours laboratory work, with two hours outside work per week. This course provides instruction in various kinds of embroidery. Crocheting, tatting and other phases of needlework are developed. Two hours credit.

Course 55.—ADVANCED DRESSMAKING.

This course provides opportunity for further developing the sense of line and proportion gained in courses 4 and 7. This course deals with the characteristic use of chiffons, silks and velvets. The projects are an afternoon gown and an evening gown. Prerequisite, course 7. Four hours credit.

Course 54.—ADVANCED NEEDLEWORK.

Senior year, first semester. Five hours laboratory work, with one hour outside work per week. This course provides instruction in the planning and making of a layette. The school will furnish the material for garments unless the student wishes to keep the articles made. Prerequisite, course 1. Two hours credit.

Course 55.—MILLINERY.

Senior year, second semester. Eight hours laboratory work, with four hours outside work per week. This course provides instruction in the selection of materials, the making and covering of frames, the fitting and trimming of hats, the making of flowers, and the renovating of millinery materials. Emphasis is placed upon the importance of the proper selection of hats, and their suitability to the wearer and to the occasions for which they are intended. Four hours credit.

Domestic Science.

Course 1*a*.—ELEMENTS OF COOKERY.

This course is planned for students who have not had a course in food preparation in high school. It develops skill in the technique of cookery, and takes up a thorough study of foods: kinds, growth, preparation for market, composition, digestibility and full value. Four hours credit.

Course 1*b*.—ELEMENTS OF COOKERY.

This is the beginning College course for students who have studied foods in high school. Food principles are studied, their source composition, food value, physical properties, digestibility, absorption and excretion. The food stuffs are studied as to selection, source, structure, food value, manufacture and cost. Considerable reference work is required. The laboratory work is of an experimental nature, determining the principles underlying food preparation. Four hours credit.

Course 2.—FOODS AND COOKERY.

This is a continuation of course 1. The two courses cover a study of beverages, carbohydrates, vegetables, batters and dough, meats and poultry, fish, eggs, milk and cheese. Following this scientific study of foods preliminary work in serving and making menus is taken up. Four hours credit.

Course 3.—PRESERVATION OF FOODS.

Four hours laboratory work per week, with two hours of outside work. This course includes the study of food preservation. Canning and preserving of fruits, jellies, conserves, marmalades and pickling, canning of vegetables by autoclave and steam sterilizing. Two hours credit.

Course 4.—METHODS.

One hour lecture, one hour outside work. This is a special methods course, dealing with administrative problems connected with home economics subjects in the public schools. The course includes the making of courses of study throughout the grades and high school, cost and planning of equipment, the correlation of these subjects with other subjects, educative value of various courses and disciplinary problems. One hour credit.

Course 5*b*.—CARE AND FEEDING OF INFANTS AND INVALIDS.

Laboratory, four hours per week. This course includes the study of abnormal conditions of the individual, through prevention and treatment. Emergencies and home nursing. The second half of the course is a study of the care and feeding of infants, including mothercraft. Two hours credit.

Course 5*a*.—HOME COOKERY AND TABLE SERVICE.

Five hours laboratory per week, two hours outside work. The purpose of this course is to give opportunity for practice in home cookery, fancy cookery, and the serving of both formal and informal meals. Two hours credit.

Course 51.—EXPERIMENTAL COOKERY.

Six hours laboratory work per week. This is a quantitative study of cooking processes, comparative study of recipes, and the cost of materials involved. Relative values of various food products common in the present-day markets. Work in demonstrations will be given along with this course. Two hours credit.

Course 52.—HOUSEHOLD AND INSTITUTIONAL MANAGEMENT.

Eight hours laboratory work per week, four hours outside work. General management of the house is studied in this course. Care of the house; values in furnishings; investigations and discussions which will secure an intelligent judgment of expenditures involved in housekeeping; rent, fuel, light, water, furniture, and the cost of living; sanitation and the prevention and removal of unsanitary conditions. Laundry work is studied in this course, also general housekeeping problems and a study of the buying, the bookkeeping, the employees, remuneration and control. Four hours credit.

Course 53.—DIETETICS, IN HEALTH AND IN DISEASE.

Eight hours laboratory work, two hours outside work per week. This course presents the application of the fundamental principles of human nutrition under varying physiological and economic conditions; in the laboratory quantitative studies of food values are made. The course deals with food requirements of the individual in infancy, adult life, and old age. Typical dietaries are planned for the individual and family requirement. Four hours credit.

Course 55.—DEMONSTRATION.

Two hours laboratory work per week, one hour outside. This course offers a study of cookery demonstration, and equips the student to give instructive demonstrations. The aim of this course is to fit the teacher to do community work, as well as class-room work. Two hours credit.

Course 54.—ELEMENTARY RESEARCH.

Four hours laboratory per week. Special problems in housewifery and housekeeping; surveys of city family conditions and rural family conditions will be made, and the general purpose of the household and family as related to the state, to education and to industry will be investigated. The thesis work of the graduate students will be done in this course. Two hours credit.

Course 56.—SCHOOL LUNCHES.

This course is a study of school lunch-room work such as is directly applicable to the public-school needs. Accounts, menus, serving, overhead expenses, and the actual serving of the lunch, are included in the course, making it a purely practical course. Three hours credit.

Drawing and Design.

Course 1.—ELEMENTARY FREE-HAND DRAWING.

The purpose of this course is to give the student a general knowledge of the fundamental principles of this subject and to enable him to acquire a facility in sketching which will be of use to him in his future work. The study course includes form study, drawing of objects in accented outline, linear and aërial perspective, nature drawing and lettering. Sketches from costumed models will be made on alternate weeks. One hour credit.

Course 2.—HISTORY OF ART.

A general review of the development of art throughout the ages. The student will make written outline which will be illustrated by tracings of the typical historic styles. The purpose is to give a clear idea of the relations of the development of concrete art with the evolution of life, lectures, reading and written work. One hour credit.

Course 3*a*.—PRIMARY DRAWING.

Drawing and construction work for the kindergarten and the first three grades of the public schools. A course for those who wish to teach or supervise this work. Drawing, design, and color suitable for the schoolroom. Methods of teaching and organization of the work, with discussion of their relations to the public-school problems. Written outlines of exercises suitable for these grades. Picture study. One hour credit.

Course 3*b*.—ELEMENTARY ARTS.

Construction work suitable for the kindergarten and first three grades. Paper cutting, stick printing, pasting and mounting, raphia work and weaving with paper, yarn, sand-table work. The work in direct connection with course 3*a*, emphasizing the constructive element. The various materials suited to the work are studied with reference to source of supply, care and use. One hour credit.

Course 4.—WATER COLOR.

A special study of rendering in pure water color. Rectangular models in simple full washes of monotone; vase form with rounded effect in color; flower sprays from copy and from still life. Landscape studies from copy indoors, and outdoor sketching of simple landscapes and street scenes. Two or four hours credit.

Course 5.—PRINCIPLES OF DESIGN.

Study of form, symmetry, proportion, patterns, lettering, mass in values, color design. Rhythm and rhyme in line work; landscape; copies and variation of historic examples; ornaments; stencil patterns. Its purpose is to give a sound knowledge of the fundamental principles of design, both theoretical and applied, and by study of plant form to teach the consistent translation of plant form into ornament. Two hours credit.

Course 6.—HISTORY OF ORNAMENT.

A study of the distinctive types of historic ornament with reference to their origin, development, derivation from natural and geometric forms and the influence of individuality and environment upon their characteristic forms. The course is given with reference to the relation of ornament to practical use, for ornament must take its proper place in the industrial arts where decoration must be used to emphasize the beauty which may be found in the lines and spaces of any constructed article. One hour credit.

Course 7.—CHARCOAL DRAWING.

A study from historic ornament, casts and still life in outline, values and modeling in mass; attention being given to the separation of light and dark masses, with use, shape and relative proportions of each, half tones and high light, cast shadows, reflected light, center of interest. One hour credit.

Course 8*a*.—ADVANCED ARTS DRAWING.

Drawing and construction work for the upper grades, from fourth to sixth, inclusive. For those who expect to supervise this work in the public schools. Typical forms in drawing and construction, elements of mechanical drawing, and the relation of drawing to the work in the shop or sewing classes, as well as to the regular school studies. Silhouettes, picture making, foreshortening, convergence, aids and tests in drawing picture study. Two hours credit.

Course 8*b*.—ADVANCED ARTS.

Construction problems in construction work or manual arts suitable for the fourth to sixth grades, inclusive. Cardboard modeling; elementary book binding; pasting; sewing and mounting; block printing; and stencil work; basketry; modeling in clay; etc.; simple tooled leather; light metal work in thin sheet tin, copper and brass—etching and bending; first sawing in the wood. Two hours credit.

Course 9.—THEORY OF COLOR.

A study of color to develop and refine the color sense, that the student may see, appreciate and enjoy the colors in nature and be able to use color with greater understanding. Primary colors in full intensity, subdued colors, tints, shades, hues and complementary colors; harmony through analogy and contrast. Physical and psychological effects of color. Two hours credit.

Course 10*a*.—SHOP SKETCHING.

A course in drawing which gives the student a knowledge of the conventions of drawing and projection, with the ability to make freehand shop sketches. Two hours credit.

Course 10*b*.

Elementary Mechanical. Use and care of instruments; principles and simple conventions of drafting; isometric and cabinet projections; development of surface patterns and orthographic projections; shop sketching, and dimensioned drawings with the ability to read and make working drawings; lettering. While this course is for beginners, the student is brought directly in touch with drafting-room practice. One hour credit.

Course 11.—SHOP DESIGN.

The principles of line, form as applied in designs, in either wood or iron. Projects, both simple and elaborate, suitable for use in public-school work. The structural elements, lines and surfaces are considered in the design of problems which are directly related to the shop. The object of the course is to enable the student to make practical structural drawings for shop use; chairs, tables, desks, etc., with full detail drawings, tracings and blue prints. Two hours credit.

Course 12.—ELEMENTARY ARCHITECTURE.

A practical course in reading and understanding house plans. The course deals directly with the requirements of the prospective home builder. A study is made of a typical plan which will involve the essential elements of a modern home, one and two story, with reference to location, lot, finance, suitable plan, arrangement of rooms for convenience, light, sanitation and heat, material and cost. Two hours credit.

Course 13.—MACHINE DRAWING.

The drawing of machine elements, bearings, hangers, and couplings with reference to shop construction. A study of the recognized standards and proportions with their use in empirical formulæ. The instruction will conform to the best drafting-room practice. A careful study is made of trade catalogues and trade drawings. Two hours credit.

Course 14.—PROJECTION DRAWING.

The use and theory of orthographic projections applied in the making of working drawings. Shop layouts and drawings. The working drawings will be made from free-hand sketches of models and machine parts. Special attention will be given to exactness, neatness, technique and skill as required in the modern drafting room. This course should qualify the student for position as draftsman. Two hours credit.

Course 15.—TECHNICAL DRAFTING.

Solution of problems relating to point, line and surface, intersections and developments, and their applications in practical shop problems. This course gives a special training in the theory of orthographic and oblique projections, and is especially for those who are preparing themselves to teach mechanical drawing.

Course 16*a*.—SHADES AND SHADOWS.

Determination of shade surfaces and casting their shadows; isometric, cabinet and orthographic projections. The purpose of this course is to give a better understanding of the projections used in working drawings. One hour credit.

Course 16*b*.—PERSPECTIVE.

The theory of mechanical perspective with its application, to the solution of problems in architectural design and in interior decoration, or in the general drawing of articles to be constructed, furniture, machines, etc. One hour credit.

Course 17.—ELEMENTARY KINEMATIC DRAWING AND GRAPHICS.

This course deals with the theory followed in practical work in transmission of power by means of belt and rope drives, cams, gears—annular, internal and bevel. The plotting of mechanical transmission of motions; graphical solutions of problems in the determination of stresses in frames and trusses. Application of the principle involved. Two hours credit.

Course 18*a*.—ARCHITECTURAL DESIGN.

The designing of a modern residence with reference to its location, plan, convenience, sanitation, heating, lighting, and materials. Working plans and elevations, with detail drawings of special interior and exterior constructions. The instructions must conform to the actual practice in building operations. Each student is expected to design a house which he would build for himself. Other constructions, as schoolhouse, barn, etc., may be substituted or included. Two hours credit.

Course 18*b*.—SPECIFICATIONS AND ESTIMATES OF COST.

A study of the modern house in relation to the cost of a medium-priced home. Cost of materials, types of exteriors, plans and heating systems. Detailed specifications for the home designed in course 18*a*. Two hours credit.

Course 19.—MACHINE DESIGN.

Problems in machine design. The application of equations of formulas to problems under construction, with a study of the materials used. Calculation of stresses and strains in the design of engines, etc. Sketching and drafting intricate machinery, with assembled and detailed drawings. Bill of materials, tracing and blue print. Two or four hours credit.

Course 20.—ART APPRECIATION.

A general survey of the field of art in all ages, with special reference to architecture and design. A study of the great masterpieces in painting, sculpture, and architecture. Lectures and reading, with a written appreciation of the great works of art. Illustrated with lantern. Two hours credit.

Course 21.—CLASSICAL ORDERS.

The student is required to draw the orders, that he may accustom his eye to good architectural proportions. The drawings will be rendered in ink and color values. Designs are built up from compositions of details of the orders, giving ample latitude for exercising ability in design. Two hours credit.

Course 22.—HOME ECONOMICS DRAWING.

A course of lectures and the working of drawings are included as a part of the regular work in preparation for teaching home economics in public schools. A series of exercises is given in the making of working drawings of pieces of school equipment and layouts of school rooms. Two hours credit.

Course 24.—HOUSE PLANNING.

The evolution of the home; relation to human life; individuality; the development of the American house. House planning, exterior and interior, with study of the various rooms and their arrangement. Different types of dwellings, with advantages or objections with reference to location. The student must become familiar with the plans of ordinary city and country houses, and be able to criticize intelligently the sanitary and economical construction. He must have a fair knowledge of materials and their relative values; of building sites, with methods of contracting, purchasing, and the finances of purchasing and building a house. One hour credit.

Course 25.—HOME DECORATION.

A study of color with relation to its application to designing of schemes of various rooms of the home. The principles of harmony in line value and color are applied to problems in wallpaper, carpets, hangings and other decorations. The physical and psychological effect of color, with suitable schemes for walls, floors and ceilings. Studies of rooms in elevation plans and perspective. Complete interiors in color. Two hours credit.

Course 26.—COSTUME DESIGN.

The development of taste in dress through a study of the principles of design and color in their direct application to problems in textiles, embroidery and costumes. Through sketches in pencils, chalk and watercolor, it aims to develop the creative power in the design with its adaptation to costume. Special problems in design and color schemes suited to the individual. Quick sketching of dresses, hats and accessories in pencil, chalk and color. Two hours credit.

Course 27.—CLASSICAL ORDERS.

The student is required to draw the orders, that he may accustom his eye to good architectural proportions. The drawings will be rendered in ink and color values. Designs are built up from compositions of details of the orders, giving ample latitude for exercising ability in design. Two hours credit.

Course 28.—ART PHOTOGRAPHY.

The application of art principles to photography, with instructions in the use of the camera in field and laboratory work; developing, printing, and mounting; enlargements, lantern slides.

Education.

A minimum of fourteen hours in education is required for a life diploma to teach in the elementary schools and the junior high schools of Kansas. A minimum of twenty-two hours is required for the B. S. degree in education. A major of thirty hours, exclusive of teaching, may be selected in education and a minor of twelve hours in any other department in which a major is offered.

ADMINISTRATION AND SUPERVISION.

Course 1.—SCHOOL MANAGEMENT.

This course deals with the elementary problems of class organization, the course of study, daily program, recitation, discipline and other topics affecting the conduct of the school. Offered each semester. Two hours credit.

Course 2.—ELEMENTARY EDUCATION.

This course presupposes completion of a high-school normal training course or its equivalent. The course of study, its organization for teaching purposes, educational values, and methods of presentation. Principles of classification, promotion and gradation of pupils, delinquent children and other vital topics affecting the elementary school. Two hours credit.

Course 3.—HISTORY OF MODERN EDUCATION.

A course in modern education, beginning with Rousseau and tracing educational movements and tendencies down to the present. Open to sophomores. Offered each semester and summer. Three hours credit.

Course 4.—CURRENT EDUCATIONAL PROBLEMS.

A study of present-day problems in education. The course is based on current educational literature, and involves a discussion of modern ideas concerning the purpose of education, subject matter, motivation, educative processes, measuring results, reorganization of school system and other kindred subjects. A library course, open to sophomores, juniors, seniors and teachers of experience. Four hours credit.

Course 5.—INDUSTRIAL EDUCATION.

Designed to familiarize the student with the more professional aspect of the work of the teacher and supervisor of the industrial arts. The work consists of lectures, assigned readings, reports, etc. Among the various topics covered by the work are the following: Early educational history; Pestalozzi, effects of his work; education in Germany, France and England with reference to industrial education and manual training; work of Victor de la Vos and the Russian system of manual training; Cygnæus, Salamon, and the sloyed movement; the beginning and development of manual training in the United States; aspect of the movement for the promotion of industrial education in the United States and abroad; legislation pertaining to industrial education; work of trade, vocational and technical schools studied and compared; sources of literature bearing on this phase of the public-school work. Second term, three single periods per week for twenty weeks. Open only to students majoring in industrial arts. Three hours credit.

Curose 51.—SCHOOL ADMINISTRATION.

A study of the larger problems of administration; the relation of the state to education; the various units of school organization, district, tonwship, county, state and nation; the various administrative officers, their powers and duties; the teaching staff and present tendencies of educational administration in America. Offered spring semester. Four hours credit.

Course 52.—EDUCATIONAL MEASUREMENTS.

An application of the principles of scientific management to the problems of the school; measuring the child, his physical and mental efficiency; the latest scientific tests for measuring the product of teaching arithmetic, English composition, handwriting, drawing and other school studies. Prerequisite, four hours psychology. Two hours credit.

Course 53 —HISTORY OF EDUCATION.

A general course, including a survey of the entire field of education in ancient, medieval and modern times. A study of educational leaders with special reference to their influence on present-day education. An elective course offered on demand. Four hours credit.

Course 54.—ADMINISTRATION OF SECONDARY EDUCATION.

The purpose of this course is to introduce the student to the vital problems of secondary education; the administration of secondary schools, courses of study, organization and management, social factors, school government and material equipment. Two hours credit.

Course 55.—PRINCIPLES OF SECONDARY EDUCATION.

This course is a combination of course 53, Administration of Secondary Education, and course 51, Psychology of High-school Subjects. Four hours credit.

PSYCHOLOGY.

Course 1.—GENERAL PSYCHOLOGY.

The purpose of this course is to give the students a working knowledge of the accepted facts and general principles of psychology. In orded to give a fair representation of the science as a whole, the descriptive, structural and dynamic phases of psychology are discussed. The point of view is on the whole functional, more attention being paid to what the mind does than to what it is. Discussions, outlines, readings, reports and simple experiments. Offered each semester. Four hours credit. Prerequisite for all other courses.

Course 1*b*.—GENERAL PSYCHOLOGY.

This course deals with the applied and dynamic phases of general psychology in its relation to education. An introduction to the field of educational psychology. For college freshmen who have had elementary psychology in high school. Two hours credit.

Course 2.—CHILD PSYCHOLOGY.

The aim of the course is to acquaint students with the most important established facts and principles of mental and physical growth of the child. To enable students to recognize types and individual differences among children; to notice, interpret and deal properly with certain defects; to cultivate an intelligent sympathy with children. Two hours credit.

Course 56.—SOCIAL PSYCHOLOGY.

A student of psychology of the origin and evolution of mental communities; the psychology of suggestion, imitation, fashion, custom, conventionality, sects, fads, crazes, mobs, and public opinion. Two hours credit.

Course 4.—PSYCHOLOGY OF ELEMENTARY SCHOOL SUBJECTS.

A study of the analysis of the mental processes involved in the presentation and acquisition of the subjects in the elementary schools: Handwriting, drawing, reading, music, spelling, history, geography, natural science. Two hours credit.

Course 57.—EDUCATIONAL PSYCHOLOGY.

This course deals with the application of psychological principles to education. The laws of learning; the amount, rate and limit of improvement; the factors and conditions of improvement; mental discipline; mental fatigue; individual differences and their causes; and original tendencies of man. Discussions, outlines, readings and reports. Course in general psychology prerequisite. Four hours credit.

Course 58.—PSYCHOLOGY OF HIGH-SCHOOL SUBJECTS.

A course in applied psychology dealing with subjects in the high schools: Mathematics, foreign languages, English, science, history, manual training, household arts. The problems of teaching students to study, and other secondary school problems. Two hours credit.

KINDERGARTEN.

Course 1.—KINDERGARTEN THEORY.

Taking the child as center of correlation, a study is made of his development, especially of the doctrine of kindergarten procedure as modified in Frœbelian literature. The foundations for the work of the course are the student's memories of his own childhood, observation, and experience with children. A study is made of child-play, methods of utilizing, etc., leading on the one hand to a study of the gifts, and on the other hand to a study of the occupations. Four hours credit.

Course 2.—STORIES AND LITERATURE.

A course designed to supply training for the work of story-telling in the kindergarten and primary grades. Practice and discussion in the art of story-telling are a part of the work. The sources of literature of the development of the myths are studied. Not only should the art of story-telling be developed in this course, but discrimination in the choice of stories for various uses of study; also the origin and meaning of myths, fairy tales and fables, and the classification, adaptation and dramatization of stories. The course is intended for those enrolled in kindergarten and primary, but may be profitably taken by any one desiring to learn the art of story-telling. Two hours credit.

THE TRAINING SCHOOL.

The Training School of the State Manual Training Normal School consists of regularly organized classes, from the kindergarten to the ninth grade, inclusive. In addition, some of the regular high-school classes are utilized for training purposes in the most advanced college classes. The school is organized into the following departments; Kindergarten; Primary; Intermediate; Advanced Grammar or Junior High School; and Departmental Teaching. The work is so planned that prospective teachers may specialize in either of the above departments or secure their training in various grades of school work. The School now has enrolled 250 students, and is under control of a director and five critic teachers, assisted by the heads of various departments of the institution.

The purpose of the Training School is to give the students an opportunity to observe good teaching, to secure actual experience in teaching and managing classes, to study the subject matter of the course of study and methods of organizing and presenting the same to classes. Courses in teaching are organized as follows:

KINDERGARTEN TEACHING.

This course requires two hours per day for one semester spent in the Kindergarten in observation teaching and the study of kindergarten theory. This course may be duplicated the second semester. Four hours credit.

Primary Teaching.

The course requires one hour per day for a semester in the Primary Department in observation and teaching. In addition, lesson plans and lesson preparation must be made before coming to class. The student is required to meet the critic teacher or head of department one hour each week for conference. Required of all taking primary teachers' course. Course duplicated the second semester. Three hours credit.

Intermediate and Grammar Grades.

Requirements for this course are as follows: One hour per day for semester in observation and teaching in class room under direction of critic teacher, one hour per week in conference with critic teacher and other student teachers, and the necessary time in preparing lessons and lesson plans. Three hours credit.

Rural Teaching.

This is a combination in which the student will spend half the semester in observation or teaching in the primary grades and the other half in teaching or observing in the intermediate or grammar grades. The course is intended for those planning to teach in rural or other ungraded schools, and is open to high-school seniors. Three hours credit.

Departmental Teaching.

This course is under the direction and control of the head of the department in which the student is majoring. He is required to teach a class in his major subject, for one semester, organizing the subject matter for teaching prposes subject to approval of the head of the department. Three hours credit.

College English.

Course 1.—Constructive English.

The formal side of English, both written and spoken. A study of the paragraph, of sentence forms, of punctuation, letter writing and formal notes. The entire course correlated with a study of American Classics. Four hours credit. Open to freshmen.

Course 2.—The Epic.

A study of the Lesser Epic: "Sohrab and Rustum," "The Idylls of the King." The Great Epic: "The Iliad," "The Odyssey," "Paradise Lost." Four hours credit. Open to freshmen and sophomores.

Course 3.—Shakespeare.

A critical study of the great dramatist as to technique, art, plot, ethics, with some study of the Elizabethan theater. Four hours credit. Open to all college classes.

Course 4.—Literary Criticism.

An intensive study of lyric poetry with reference to construction, style, art, spirit, unity, consistency, with special attention paid to the intellectual, the imaginative and the emotional elements of the classic. Four hours credit. Open to sophomores and juniors.

Course 5.—The Short Story.

Construction work on plot, characterization and visualization, a critical study of some of the short story masterpieces. Two hours credit. Open to freshmen and sophomores.

Course 51.—HISTORY OF ENGLISH LITERATURE.

The history of English literature from its beginning to the age of Elizabeth. Emphasis on Beowulf, the evolution of the English language, and Chaucer; an intensive study of Chaucer's "Prologue," and two of "The Canterbury Tales." Four hours credit.

Course 52.—HISTORY OF ENGLISH LITERATURE.

The History of English literature from the beginning of the Elizabethan Era to the Victorian Era. Intensive study of Spenser's "Faerie Queene," Milton's shorter poems, the classical school, and the Romantic Revival. Four hours credit.

Course 53.—THE ENGLISH DRAMA.

A study of the evolution of the drama from the miracle plays to the closing of the theaters by the Puritan Parliament. A study of Lodge, Green, Marlowe, Shakespeare, Johnson, Beaumont and Fletcher, Ford, Middleton, Webster, Massinger. Four hours credit. Open to juniors and seniors.

Course 54.—EVOLUTION OF THE NOVEL.

Richardson, Fielding, Smollet, Sterne, Austen, Bronte, Scott, Dickens, Thackeray, Eliot, Hawthorne, James, Howell. Four hours credit. Open to juniors and seniors.

Course 55.—VICTORIAN POETRY.

Appreciation and criticism of Browning, Tennyson, Arnold, Rosetti, Swinburne. Some attention to current poetry. Four hours credit. Open to juniors and seniors.

Course 56.—THE ENGLISH ESSAY.

Bacon, Montaigne, Arnold, Lamb, Ruskin, Macaulay, Carlyle, Fitch. Two hours credit. Open to juniors and seniors.

Geography.

Course 1.—PHYSIOGRAPHY.

Designed for college students who desire scientific knowledge of the earth, its relations, physical features, and their origin and development. The work is supplemented by laboratory and field work. Economic controls are given special attention. Courses required in primary teachers' course and in grade teachers' course. Offered each semester. Four hours credit.

Course 2.—INDUSTRIAL GEOGRAPHY.

This course includes geography of agriculture, textiles, food products, minerals, manufactures, fishing, lumbering and commerce. It is designed to correlate with other industrial subjects. Offered first semester and summer term. Four hours credit.

Course 3.—GEOGRAPHY OF AMERICAN HISTORY.

This course is designed especially to correlate with the American history courses, and consists of a student of geographic conditions which have influenced the course of American history, and of their importance as compared with one another and with non-geographic factors. Four hours credit. Offered second semester and summer term.

Course 4.—PRIMARY GRADE WORK.

This course is designed especially for teachers of nature study and of primary grades, and for those doing departmental work in geography. The work consists largely of selection and adaption of material best suited to the first four grades and to the method of presentation. Two hours credit. Offered second semester and summer term.

Course 5.—Intermediate and Grammar Work.

This course encompasses subject matter and methods for the grades above the fourth, and is designed for grade and rural teachers and those doing departmental work in geography. Two hours credit.

Course 6.—Commercial Geography.

This course is organized to give the student a scientific knowledge of the three distinctive sets of controls—the natural, the human, and the economic. It correlates not only with the other commercial courses, but with the industrial subjects as well. Four hours credit. Two hours required in commercial course offered first semester.

Course 7.—Geography Review.

This course is for students who desire a thorough review of general geography and for those who teach in the grades, and those who are preparing to do departmental work in geography. Two hours credit.

Course 8.—Industrial Geography of Kansas.

This course is offered to give the students an opportunity to study the industrial development of our own state as controlled by geographic influences. Two hours credit.

Course 9.—Mathematical Geography.

This course is offered in order to give the student an opportunity to make a definite study of the size, form, movement and measurements of the earth, together with its relation to the sun and moon. Two hours credit.

Course 10.—Topography.

This course is designed to give the students an opportunity to study designated areas in detail. Two hours credit.

History and Social Sciences.

Course 1.—Greek History.

A general survey of ancient Greece from the earliest period to its conquest by Rome. Lectures, reports, discussions and library readings. Not open to students who offer ancient history as entrance credit. Open to freshmen and sophomores. First semester. Two hours credit.

Course 2.—Roman History.

This course takes up Rome at her earliest date and follows her career to the fall of the western empire. Reports, discussions and library readings. Not open to students who offer Roman history as entrance credit. Open to freshmen and sophomores. First semester. Two hours credit.

Course 3.—Medieval History.

A survey of western Europe from the fall of Rome to the opening of the Renaissance. Not open to students who offer medieval history as entrance credit. Open to freshmen and sophomores. Second semester. Two hours credit.

Course 4.—MODERN HISTORY.

A brief course in the history of Europe from opening of Renaissance to outbreak of the French Revolution. Open to freshmen and sophomores. Second semester. Two hours credit.

Course 5.—ENGLISH HISTORY.

A general survey of the whole range of English history down to the present time. Special attention to rise of English government and institutions and their relation to our own. Outlines will be used and special readings assigned, papers prepared and read before class, with illustrated lectures. Four hours credit.

Course 6.—AMERICAN HISTORY I.

This is a thorough college course covering the subject of American history for mature students and teachers who may want to strengthen themselves in the teaching of the subject. Four hours credit.

Course 51.—INDUSTRIAL HISTORY.

A careful study of our natural resources, growth of population, expansion of territory, invention of labor-saving machinery and industrial growth and development from the discovery of America to present times. Besides the use of a text the students are required to prepare papers and read them before the class for discussion. Offered four hours per week during second semester of sophomore or junior year, College course. Four hours credit.

Course 52.—ECONOMICS.

This course deals with the theories and principles of man's activities in the satiation of human wants. It applies these principles and theories to the production and consumption of wealth. It aims to lay well the foundations for advanced work along this line. Considerable library work is required. Special subjects assigned to individual students for investigation and reports to the class. Offered four hours per week during first semester of junior or senior year, College course. Four hours credit.

Course 7.—CONSTITUTIONAL HISTORY.

A study of the evolution of the American constitution, its interpretation and application to the times. Two hours credit.

Course 53.—POLITICAL SCIENCE.

In this course we study the theories and functions of the modern state as exemplified in the leading nations of the world. Also careful observation of likenesses and differences of these states. Offered two hours per week during second semester of junior or senior year, College course. Two hours credit.

Course 56.—MODERN EUROPE.

Beginning with 1789, governmental change and progress of the countries of Europe are studied. Special emphasis is laid upon the rise of popular governments, the formation of political parties and the limitation of monarchies. Two hours credit.

Course 57.—TEACHING HISTORY.

Open to all students majoring in history or those who have had at least fifteen hours in history and expect to teach it. Offered two hours per week during first semester of senior year, College course. Two hours credit.

Course 58.—Sociology.

An introductory study of the nature, function and development or progress of society. The aim is to familiarize the student with society and some of its problems and cultivate a desire to aid in the solution of these problems. Four hours credit.

Course 59.—Applied Sociology.

In this course we endeavor to apply the principles of sociology to preent-day problems. Course 11 is a prerequisite. Offered two hours per week during second semester of senior year, College course. Two hours credit.

Course 60.—History of the Reformation.

This course is preceded by a brief survey of the rise of the Christian Church, its institutions and doctrinal development. Special emphasis is laid upon the causes leading to and the great agents employed in the Reformation. Four hours credit.

Course 61.—Parliamentary Law and Practical Legislation.

This course is to develop the ability of the student to preside over deliberative bodies creditably. Also to inform him as to the actual practcal methods employed in our legislative assemblies. It will consist of special drills and textbook work. Offered two hours per week. Two hours credit.

Course 62.—Bible Study.

This is a course of one hour recitation per week in a careful study of the English Bible. Offered each semester after school hours. One hour credit.

Course 63.—American History II.

This course covers the period from 1750 to 1829. It is a study of those forces and events which helped to create a national ideal and a national spirit. It deals with those contributions and political problems from wthin and from without which tended to weld our people into one sovereign state. Two hours credit.

Course 64.—American History III.

This course is a study of the difficulties and dangers threatening the life of a nation, together with the forces that contributed to our marvelous progress. It covers the period from 1829 to date. Two hours credit.

Course 65.—Current History.

A thorough study of current events in which we use the best periodicals and magazines for material. One hour a week. Open to all college students. One hour credit.

Note.—Courses 62 and 65 are open to all classes.

Industrial Arts.

The ideals and aims of the educational forces have changed rapidly in the last few years. New standards of service have been set which must be measured up to by the educational institutions. In conformity with these new ideals, we recognize that "Education is the process by means of which the individual acquires experience that will function in rendering more efficient his future action," and our citizenship demands that every individual shall acquire these experiences and be able to function them in his daily work. Consequently industrial training should become a large part of every school curriculum. Upon the Normal schools must rest the burden of training teachers who can make this newer kind of education the vital and important part of every child's training.

For several years this school has been rendering very efficient service in preparing teachers for the industrial arts. It occupies a unique and an enviable position among the normal schools of the country. It is now taking another step in advance of all others, in that it is placing its shop work upon a factory basis and is pursuing modern economic shop methods. Instead of the usual plan of following a set course of models or projects, it is now the plan to build chiefly such articles as will easily and readily find a market, and just as soon as the student demonstrates his ability to work with a reasonable degree of proficiency and dispatch he is permitted to do work that will enable him to realize in a financial way. Modern methods of shop procedure, time cards, checking systems, etc., are used and the work made as practical as it is possible to make it.

WOODWORK.

Course 1*a*.—ELEMENTARY BENCH WORK.

A course to accompany 1*b* for those who have had no previous training or who lack the necessary manual dexterity. Five double periods per week for twenty weeks. Four hours credit.

Course 1*b*.—BENCH WORK.

A course which aims primarily to give a training in the technical processes as a basis for teaching in the sixth, seventh, eighth and ninth grades. It is not intended to develop mere manual dexterity, but to balance theory and practice. A portion of the time is given to demonstrations and lectures, discussions and reports on methods of teaching and courses of study. Students anticipate and solve some of the problems of teaching by preparing and presenting lessons or demonstrating tool processes as they would be given to a public-school class. Each student is encouraged to design original models which involve a definite order of related processes, and place them in an established course. Throughout the term, special outside reading is required on such subjects as tools and tool processes, principles of construction, fastenings—nails, screws, wedges, dowels, and glue—simple wood finishes, care of brushes, etc. A course for those who have had one or more years' training in some accredited school and those who have had experience in the woodworking trades. Others will be required to take course 1*a* coincident with this course. Five double periods per week for twenty weeks. Four hours credit.

Course 3*a*.—WOOD TURNING.

Consists of instruction in the care of the lathe and tools, and in making a series of exercise pieces which give familiarity with the principles involved in roughing and turning cylinders, square ends, tapers, square corners, "V" cuts, beads and coves; and in faceplate, chuck and mandrel work. Correct grinding and honing of cutting tools is taught. Each piece of work introduces a new tool process, and a careful study is made of the relation between the tool and the revolving wood, so that a student understands the reason for handling a tool in a particular way for each cut. Each exercise will be followed by a practical aplication of the principle learned, on gift pieces, patterns and soft metals. Prerequisite, course 1*b* or extended experience. Five double periods per week for twenty weeks. Four hours credit.

Course 3*b*.—WOOD TURNING.

An abridged course for those who have had previous training or experience in the use of the lathe. Much of the purely exercise work is eliminated. Only enough of this preliminary work is demanded as will familiarize the student with the requirements of a good high-school course. The principal part of the work will deal with the more difficult faceplate, chuck and mandrel work, and with furniture-repair work. Prerequisite, course 1*b*. Five single periods per week for twenty weeks. Two hours credit.

Course 5.—FURNITURE AND CABINETMAKING.

An extension of course one, devoted largely to teaching the principles, use and care of the tools and machines with which the cabinetmaker works. The student learns to lay out work, and to make the various joints used in cabinet work; to set locks and hinges; and the use of finishing materials. Pieces of furniture are designed and drawn, mill bills worked out, and pieces prepared for hand work in the mill room. Economy of time, material, and energy is emphasized. Commercial methods are followed as nearly as possible. A carefully prepared notebook on the work done, covering fastening devices, materials, etc., is required. Outside reading is made a feature of the course. Prerequisite, course 1*b*, or extended experience. Five double periods per week for twenty weeks. Four hours credit.

Course 7.—PATTERN MAKING.

Provides a thorough training in the reading of shop drawings, and their interpretation in the form of completed patterns. The student is taught the meaning and necessity of draft, the use of core prints, and making of core boxes; shrinkage of iron and other metals; its effect on different shapes and thicknesses of castings; how to joint lumber to prevent warping and shrinkage of patterns; the use of segmental work; the meaning of such terms as fillet, boss, flange, rib, web, etc. Lectures and demonstrations will occur at frequent intervals. Finishing will receive its proper attention. All of the patterns made will be molded by the student making them, and any errors will thus be brought to the attention of the particular student. A study will be made of all the interests involved in the foundry of each pattern. Prerequisite, course 1*b* and 3. Five double periods per week for twenty weeks. Four hours credit.

Course 59.—ADVANCED CABINETMAKING AND MILL WORK.

This course is essentially one in wood machine work, and the factory method of production is the main feature. Problems more difficult than those attempted in course three are worked out. The mill bill is made out, the various pieces cut in the most economical way by the use of power machinery; the mortises, tenons, relishes, grooves, etc., are laid out; the machinery is set up, and the various operations are done according to shop methods. Mill marks and other indentations are removed by the use of planes, scrapers and sandpaper. The various parts are asembled and finished. The use of the various machines makes the student familiar with woodworking machinery, its care and maintenance; grinding of cutters; adjusting and oiling of bearings; lacing and gluing belts, etc. In order that the student may observe methods and conditions that obtain in this industry visits to factories are encouraged. Prerequisite, courses 1*b* and 5. Five double periods per week for twenty weeks. Four hours credit.

Course 9.—RURAL SCHOOL WOODWORK.

A course designed to meet the needs of teaching in rural schools. It consists of instruction in the use and care of tools and in making projects involving the simpler principles of construction. Two hours credit.

Course 33.—BASKETRY.

This course involves the making of projects in reed and raffia, and include a study of design as well as of construction. One or two hours credit.

Course 35.—BOOK BINDING.

Consists of work on problems involving the several types of construction used in book making. Two or four hours credit.

Course 51.—CARPENTRY.

This course is planned to give the student a practical working knowledge of the various methods of house construction.

The construction work consists of the actual construction of a house on a permanent site, or a section of a house in the shop, the students placing and levelng sills and floor joists, erecting walls, plumbing walls, cutting openings in studding and joists; laying out, cutting and placing common, hip and valley, and jack rafters; framing porch, etc. The square being used to frame all work, it is essential that every workman shauld have a thorough and practical knowledge of its capabilities and applications, and this course is to aid in acquiring that knowledge.

Enough outside finish, such as cornice work, shingling, setting frames, siding, and porch finish, is given to acquaint the student with the best methods of commercial practice. Additional practice offered in cutting and placing jambs, fitting and hanging doors and sash, inside finish, fitting hardware, laying and scraping floors.

Especial emphasis placed upon stair work, laying out, cutting and placing rough stringers for steps; mode of laying out ordinary straight stairs; laying out winders; finishing with risers, treads and skirt boards; method of laying out and working hand-railing for quarter-turn and winding stairways. Prerequisite, course 1*b*, 5, 9, 19. Five double periods per week of twenty weeks. Four hours credit.

Course 53.—ADVANCED PATTERN MAKING.

An advanced course emphasizing the construction of patterns for a complete machine, such as lathe, drill press, gas engine, electric motor, etc. Prerequisite, course 7. Five double periods per week for twenty weeks. Four hours credit.

Course 55.—SURVEY OF INDUSTRIES.

Industrial education means industrial and social efficiency. Industrial education has, therefore, for its purpose the acquisition of a fund of knowledge that is capable of making its possessor an efficient future worker in the industrial world. It must acquaint the individual with the tools and materials used in industrial processes. It must give him a broad outlook upon industrial conditions. It must do its part to make him a useful, happy citizen.

The time is at hand when more than mere ability to instruct in the use of tools is demanded of the manual training teacher. The man who possesses this broad understanding of the purpose of industrial training is the man who is now in demand as the director of the industrial work in our public-school systems. This makes this school a pioneer in this field of work by giving its students an opportunity and by aiding them in making a survey of the industries of this community and of the state, so that the teachers and directors of industrial work in this state may know how to become acquainted with the needs of the community in which they may be employed, that their work in the school may properly function in the world without. Two hours credit.

Course 17.—WOOD FINISHING.

Designing to familiarize the student with the various processes employed in wood finishing. A study and practice in the mixing and applying of finishing materials for interior woodwork and furniture. A collection of woods from which small panels are planed, scraped, sanded, stained, filled, and polished, showing the method and different kinds of finish. Some time will be given to practical work in painting, interior finish, and the finishing and refinishing of furniture. Special attention given to conditions and methods for handling the work in manual training schools. Elective. Five double periods per week for twenty weeks. Four hours credit.

Course 19.—BUILDING CONSTRUCTION.

The work of this course aims to give each student the fundamentals of building construction. There are, perhaps, two classes of teachers to be considered in formulating this course—those who may be required to teach carpentry restricted to house building in the town and city schools, and those who may desire a broader knowledge of the subject that will enable them to instruct in the rural communities where the demand is for a course in farm carpentry. Students specializing in agriculture will find work in this course very profitable. The work is largely individual, and encouragement is given to the greatest possible variety of projects. Prerequisite, for students majoring in Industrial Arts, course 1*b*; for all others, course 1*a* or its equivalent. Five double periods per week for twenty weeks. Four hours credit.

Course 57.—CEMENT WORK.

A course designed to teach the fundamental principles involved in concrete construction by making a series of projects involving different ways of making and finishing concrete; to teach the proper use and care of the tools used in the work, and the methods of presenting the work to grade and high-school pupils. The course should appeal to those who expect to follow agricultural pursuits, and those who may teach in rural communities. The work consists of lectures on the importance of cement work; history and comparison of different cements; compositions of cement; proportioning; methods of measuring, and methods of mixing different proportions; tools and apparatus necessary for practical work, and the care of same; projects involving plain concrete construction, such as sidewalks, curbs, floors, walls, posts—fence, hitching and clothes—and building blocks; reinforced concrete construction, such as columns, beams, steps, silos, cisterns, tanks, arches, culverts, driveways, and troughs. Two double periods per week for twenty weeks. Two hours credit.

Course 25.—DEPARTMENTAL METHODS.

This course includes organization of courses of study in different media, and for different classes to meet given conditions; methods of presentation of subject matter; relation of manual training to other school courses; administration and supervision of a manual-training department; planning equipment; cost of equipment and of maintenance of courses in elementary and secondary schools; specifications and orders written for equipment purchases. Two single periods per week for twenty weeks. Two hours credit.

Course 27.—SAW AND EDGE-TOOL SHARPENING.

Different kinds of saws and sharp-edged tools are studied in relation to the work that they are to perform, and ample practice is afforded to make application of the theory learned. A study is made of the proper angle for teeth of different types of saws. Blank blades are used on which to lay out the teeth, and then the waste is removed and the teeth jointed, set and sharpened. Much practice is required in fitting or putting into proper condition crosscut, rip, back, circular and band saws. Also brazing receives much attention. In the instruction for grinding and sharpening edge tools, means and ways for holding the larger knives, such as joiner and surfacer knives, receives attention, so that those who are not fortunate enough to have an automatic grinder may know how to do this important work. This is a very practical and serviceable course. Elective. Three single periods per week for twenty weeks. One hour credit.

EQUIPMENT FOR WOODWORKING.

In introducing manual training into a school system it is always difficult to determine how a given appropriation can best provide the most efficient equipment. There should be several determining elements in planning the manual-training course of study and the necessary equipment for carrying it on.

In order to answer frequent inquiries as to the cost of introducing manual training into a system of schools, the following lists are based on conditions of special appropriation rather than upon special educational aims. It is not the hope that these lists will be entirely satisfactory to all manual-training teachers. Some of the equipments specified are perhaps not the best possible, but they do represent very satisfactory selections for the money invested.

Minimum Equipment (Individual).

1 bench with wood vise, without drawer	$7.00
1 Bailey No. 4 smooth plane	1.60
1 12-inch back saw	1.00
1 No. 62 Stanley marking gauge	.15
1 No. 12 6-inch Stanley try-square	.20
1 ¼-inch Buck Bros. firmer chisel	.22
1 1-inch Buck Bros. firmer chisel	.36
1 No. 8 bench brush	.25
Total	$10.78

General Equipment.

1 Disston No. 7 crosscut saw, 10 points, 24-inch	$1.25
1 Disston No. 7 rip saw, 8 points, 24-inch	1.25
1 turning saw, 12-inch frame	.90
1 Barber plain brace, 8-inch sweep	.50
1 screw driver, 6-inch blade	.20
1 6-inch wing divider	.15
1 6-inch T bevel	.20
2 adz-eye claw hammers, No. 12	1.00
1 set Irwin auger bits	3.00
1 No. 41 Yankee automatic drill	1.00
3 ¾-inch gauges, outside ground	1.00
3 scrapers	.25
1 nail set	.10
4 10-inch hand screw clamps	1.25
2 wood-bar carpenter's clamps	1.80
1 spoke shave	.12
1 framing square	.75
1 mounted oilstone	.75
1 foot-power grindstone	5.00
Total	$20.47

Medium Equipment (Individual).

1 bench with wood vise	$12.00
1 jack plane, Bailey No. 5	1.75
1 block plane, Bailey No. 9½	.65
1 straight boxwood rule	.10
1 12-inch back saw	1.00
1 marking gauge, Stanley No. 62	.12
1 No. 1 round hickory mallet	.13
1 No. 12 6-inch Stanley try-square	.20
1 6-inch wing divider	.15
1 screw driver, 4-inch blade	.15
1 ¼-inch Buck Bros. firmer chisel	.22
1 ½-inch Buck Bros. firmer chisel	.27
1 1-inch Buck Bros. firmer chisel	.36
1 No. 2A bench brush	.30
Total	$17.40

General Equipment.

3 Disston No. 7 crosscut saws, 10 points, 24-inch	$3.75
3 Disston No. 7 rip saws, 8 points, 24-inch	3.75
1 12-inch turning saw	.90
1 keyhole saw	.25
1 set Irwin auger bits	3.00
1 Miller's Falls hand drill No. 1	1.25
1 screw driver, 6-inch blade	.20
3 6-inch T bevels	.60
3 nail sets, assorted	.25
4 adz-eye claw hammers, No. 12	2.00
1 Barber ratchet brace, No. 322, 8-inch sweep	1.10
1 Barber ratchet brace, No. 323, 10-inch sweep	1.10
4 ¾-inch gouges, outside ground	1.40
1 set No. 15 Buck Bros. carving tools	2.15
1 framing square	.75
4 hand wood scrapers	.35
6 10-inch hand wood clamps	1.85
6 8-inch hand wood clamps	1.50
4 wood-bar carpenter's clamps	3.50
1 mounted oilstone	.75
1 steel oiler	.10
3 spokeshaves No. 64	.45
1 mounted grindstone	9.00
Total	$39.95

Complete Equipment (Individual).

1 bench, with rapid-acting vise	$20.00
1 Stanley Bed Rock jack plane No. 605	2.00
1 Stanley Bed Rock smooth plane No. 604	1.85
1 Stanley knuckle-joint block plane No. 18	.85
1 2-foot two-fold rule	.12
1 No. 8 12-inch Bishop back saw	1.00
1 No. 12 adz-eye claw hammer	.50
1 No. 1 round hickory mallet	.13
1 Stanley No. 71 marking gauge	.35
1 Stanley try-square, 6-inch blade	.20
1 Stanley No. 25, 6-inch T bevel	.20
1 6-inch wing divider	.15
1 screw driver, 6-inch blade	.30
1 ¼-inch Buck Bros. firmer chisel	.22

1 ½-inch Buck Bros. firmer chisel	$0.27
1 1-inch Buck Bros. firmer chisel	.36
1 No. 2A bench brush	.30
Total	$28.80

General Equipment.

3 Bishop No. 90 crosscut saws, 8 points, 24-inch	$1.75
3 Bishop No. 90 crosscut saws, 11 points, 24-inch	1.75
2 Bishop No. 90 rip saws, 8 points, 24-inch	1.75
2 Bishop No. 90 rip saws, 6 points, 24-inch	1.75
1 set Irwin auger bits	3.00
1 Clark's expansive bit	.85
1 Miller's Falls hand drill No. 1	1.25
1 Yankee No. 41 automatic hand drill	1.00
1 12-inch turning saw	.90
1 keyhole saw	.25
3 nail sets, assorted	.20
1 Langdon or Stanley miter box	9.00
1 drawknife, 8-inch blade	.65
2 framing squares	1.50
1 Stanley universal plane	12.00
6 1-inch gouges, outside ground	2.70
6 ½-inch gouges, outside ground	2.00
1 set J. S. Addis carving tools	5.00
6 cabinet scrapers	.50
1 Bailey No. 8 jointer	3.00
6 12-inch hand screw clamps, steel spindles	4.80
6 10-inch hand screw clamps, steel spindles	4.50
6 6-inch hand screw clamps, steel spindles	3.60
4 carpenter's steel clamps, 48-inch	6.00
4 carpenter's wood-bar clamps, 5 foot	3.50
2 oilstones, mounted	1.50
1 steel oiler	.10
1 treadle grindstone	12.00
6 files, assorted	1.25
1 coping saw	.50
2 rose countersinks	.24
2 screw-driver bits	.30
4 Stanley spokeshaves, No 54	1.00
Total	$90.09

In the event that power woodworking machinery is added, the following machines are perhaps most essential, in the order named:

1 universal or combination table saw.
1 12-inch jointer, safety cylinder head, and guard.
1 30-inch band saw.
1 24-inch single surfacer or planer.
1 mortiser.
1 wood-turning lathe with tools.
1 tenoner.
1 belt sander.
1 wood trimmer.

METAL WORK.

Although not so extensively used in this section of the country as wood work, it is rapidly coming to the fore, and it will be but a short time when all schools will adopt this course in their manual-training work.

As taught in this school, it gives the student the theoretical as well as the practical side of the work. It not only shows how the work is done, but why it is done. All work is done from drawings, and must be done accordingly before credit can be given.

The student receives some very practical work in making all new and repair parts about the institution.

Metal work is divided into three distinct subjects as follows:

Forging,
Machine Shop Work,
Foundry Practice.

These three subjects are subdivded into the different courses as taken up.

Forging is divided into two classes: (*a*) Elementary forging; (*b*) general forging.

Machine-shop work is divided as follows: (*a*) Bench metal work; (*b*) elementary machine work; (*c*) general machine-shop practice; (*d*) tool and die making.

Foundry: (*a*) Bench work; (*b*) floor work.

The equipment in this department is surpassed by none in this section of the country, either in schools or commercial shops, all shops being well lighted and ventilated.

The forge shop equipment is:

12 Buffalo overhead-draft hand forges and anvils.
9 Sturtevant down-draft power forges and anvils.
1 hand drill press.
1 power hammer.
1 emery grinder.
Bench and blacksmith vises, and small tools necessary to make the shop complete.

The machine shop consists of:

6 work benches.
12 4-inch Packers vises.
1 24-inch LeBlond engine lathe and equipment.
1 16-inch LeBlond lathe and equipment.
1 15-inch LeBlond lathe and equipment.
3 14-inch Sebastian lathes and equipment.
1 12-inch Seneca Falls lathe and equipment, with gear-cutting attachment.
1 15-inch Shellenbach lathe and equipment.
1 12-inch Hendee lathe and equipment.
1 No. 1½ nulling machine and equipment.
1 Cincinnati grinder and equipment.
1 safety net grinder.
1 26-inch Gray planer.
1 16-inch Steptoe shaper.
1 Stanley sensitive drill.
1 Kern drill press.
1 Stewart combination furnace.
1 electric emery grinder.
1 Swain punch.
1 bench lathe.
1 12-inch Marvel power hack saw.
1 10-inch Bun circular saw.

A fully equipped tool room, consisting of drills, taps, reamers, cutters, etc., necessary to make shop complete. The tool room is run on a check system and is in charge of a student who is responsible for the same.

Foundry is equipped with a No. 1 Whiting 22-inch cupola, one Obermayer core oven, and benches and hand tools necessary to make the foundry complete and for bench and floor work.

METAL-WORKING COURSES EXPLAINED.

Course 2.—FORGING.

The theoretical as well as the practical side is taken up in this course. Forging may be classed as the introduction into metal work, and this course must be completed before we can expect to do satisfactory work in the other metal-working departments. This work takes in the construction of different kinds of forges; the fire and its parts; fuel; proper use of tools; the heats for the working of different materials; drawing out, bending, swaging, upsetting, twisting; several kinds of welds; uses of flux, and kinds; punching; the making of chisels, hammers, blacksmith's tools, lathe, planer, shaper, plumbers' and bricklayers' tools; use of power hammer; the annealing, hardening and tempering of tools for different metals; casehardening and coloring. Outside reading is required in this course. Ten hours in shop, two hours outside. Four hours credit.

Course 4.—BENCH AND ELEMENTARY MACHINE-SHOP PRACTICE.

This course is planned to give the student the correct idea as to the use of hand and small machine tools, the theoretical and practical work for the beginner. It consists of a series of exercises on the bench, such as chipping, filing to fit, laying out, centering, and machine drilling, scraping to a surface, tapping and threading with hand dies. From bench work the student receives a good insight as to the work done on the machine. Elementary work on the machine consists of taking of notes relative to the working speeds and feeds of machine on different metals, also the grinding of drills and tools for several metals to get the best results from these grindings. The practical part of this course is the use of all lathes, planers, shapers, drill presses, saws, and plain milling-machine work. In lathe work we do straight cylindrical taper turning, and boring, shouldering, parting, chuck work; the cutting of single, V and U. S. standard threads; hand turning and knurling. Planer and shaper work consists of straight, angle and oval cutting, key-seating and slotting. In milling work we do plain end, face and straddle milling, slotting, sawing and key-seating. Prerequisite, course 2. Ten hours in shop, two hours outside. Four hours credit.

Course 8.—GENERAL MACHINE-SHOP PRACTICE.

This course is a continuation of course 4, designed for the student's use in machine construction, millwrighting, and general repair work. Machine construction is the making of small machinery, instruments and tools, the cutting of multiple threads on the lathe; also square, worm and acme threads; the use of the universal milling and grinding machines, such as using the dividing head, plain and differential indexing, vertical milling and slotting; making spur, spiral, bevel and worm gears, and plain and cylindrical grinding on the grinder. Prerequisite, courses 2-4. Ten hours in shop, two hours outside. Four hours credit.

Course 52.—TOOL AND DIE MAKING.

Tool and die making are more advanced work in shop practice. In this course mathematics plays an important part. The practical part consists of the making, annealing, hardening, tempering of all milling-machine tools or cutters, and of the hand tools, such as mandrels, taps, dies, reamers, drills, and all necessary small tools. Internal grinding is also given, and the making of jigs. Die making consists of the making, annealing, tempering, etc., of dies and punches for practical use on our punch press. Prerequisite, courses 2, 4-6. Ten hours shop, two hours outside. Four hours credit.

Course 14.—FOUNDRY.

Manual-training schools that give a course in pattern making should introduce foundry work. Pattern making can not be properly taught unless some facilities are available for demonstrating molding methods. Without this the beginner finds it very hard to understand the methods and constructions of patterns.

Lectures are given on the following: Foundry terms, tools and flasks, molding sand, green sand, molding, facing, core sand and mixtures, binders and cores, metals and pressure in molds, core ovens, fluxes, and their uses, brass furnaces, etc.

Demonstrations of molding. Green- and dry-sand molding and loam work, ramming, venting, parting, gating, and other practical processes.

Molding practice. Cutting and tempering of sand, two- and three-part and check flash work bedding in, sweep work, and open sand molding.

Core making. Mixing core sand, making, baking and setting cores.

Use of brass furnace. Firing, melting, mixing, skimming and pouring nonferrous metals.

Cupola practice. Lining, making bottom and breast, drying, firing, charging, mixing metals and melting, pouring, skimming and chipping castings. Ten hours shop, two hours outside. Four hours credit.

Course 58.—FARM MECHANICS.

In this age of farming the thing to be considered is economy of time and efficiency, and this course is especially designed to help the farm community in the care and repair of farm machinery. It includes the making, tempering, etc., of chisels, picks, bolts, hooks, clevises, swivels, chains, punches, hammers, the sharpening of plowshares, cultivator teeth, etc. Special lectures are given in this course on the care of the horse's feet and legs. The care and repair of gas and gasoline engines are also included. Prerequisite, courses 2-4. Ten hours shop, two hours outside. Four hours credit.

Course 60.—SHEET AND HAMMERED METAL.

Sheet-metal work consists of laying out, forming, riveting, soldering and brazing, as used in such work, pertaining to the making of boxes, cylinders, cornice and ell work in tin, zinc or copper. Prerequisite, course 14, Drawing Department. Five hours in shop, two hours outside. Two hours credit.

Arts and Crafts.

This field of education is receiving more and more consideration each year. It not only offers an opportunity to make pieces of merit and value, but an understanding of good design is acquired by the application of the principles of good design in the shaping and decorating of definite materials.

Courses 3 and 8, Department of Drawing and Design, are so organized that the student receives a general knowledge of the handwork and drawing which is practicable in the grades as well as actual practice in applying the elementary processes to the more common materials. These courses should, however, be followed by an additional course in which a detailed study of the material is made and in which it is possible to acquire a considerable degree of efficiency.

The following courses are offered for that purpose:

Course 31.—ART LEATHER.

This craft presents unlimited possibilities, and the work possesses the charm of variety that is given to original design. The processes of tooling, modeling and coloring will be taught in executing designs on useful articles. Two or four hours credit.

Course 32.—ART METAL.

This craft affords an opportunity for individual expression in copper and brass. In the making of trays, desk sets, bowls, etc., students will acquire a knowledge of the basic principles and processes. Two hours credit.

Course 34.—JEWELRY.

This course carries the student through the elementary steps of saw-piercing, etching, soldering and stone-setting. Open only to those who have had art metal. Two or four hours credit.

Course 36.—ELEMENTARY POTTERY.

This course involves the making of tiles, bowls, vases, etc., by building piece upon piece. Two hours credit.

Course 38.—ADVANCED POTTERY.

In this course pieces are made by throwing or casting. Practical experience is given in glazing and firing. Open only to those who have had elementary pottery. Two or four hours credit.

Course 37.—PRINTING.

Experience has shown that printing can be made a vital force in the teaching of English. This concrete application of the rules of good English fixes them in the pupil's mind in such a way that he seldom forgets their use. The courses, as planned, includes practical work in typesetting, design, and regular work on the Gordon press. Additional courses will be offered if there is sufficient demand for them. Four hours credit.

Foreign Languages.

Learn languages early. There is no more valuable tool for the expression of thought. Readiness in understanding the meaning of the printed page, elegance, accuracy and clearness of expression depends on the development of the language faculty, which can be done to increased advantage by the study of other languages than our own at the earliest possible moment.

The Latin language is inseparably interwoven into all modern thought, expression, civilization. When taught according to modern methods and for modern values it is proving very popular. The junior high school in many places offers opportunities for the correlation of Latin with other subjects, especially English.

The study of German introduces us to the life, work and civilization of the Germans—in many respects world's most efficient nation. It is thus indispensable to an adequate understanding of the world's present thought.

French, the world's most polished and brilliant language, is a valuable tool for advanced study in any department.

Spanish is in great demand as an introduction to the life and work of Latin Amerca, some of it within our own borders.

A major in languages may be made in German alone, in Latin and German, Latin and Romance (French, Spanish) or modern languages. Latin 1 and 2, German 1, and French 1 will not be counted toward a major.

Students taking five-hour courses in language will be limited strictly to sixteen hours' enrollment, inclusive of physical training and club work.

FRENCH.

Course 1.—ELEMENTARY.

Fraser and Squair: Shorter French Course. Reading of about 150 pages of simple French. Emphasis on verbs and pronouns. Phonetics after the LeDaum method. Daily translation into English and French. Conversation. Five hours credit.

Course 2.—INTERMEDIATE.

Reading of works such as Dumas' Trois Mousquetaires or Swiss Travel, Bowen's French Lyrics, Rostand's Les Romanesques, modern stories. Grammar review, dictation, emphasis on idioms. Three hours credit.

Course 2*a*.—COMPOSITION.

Written exercises, conversation, introduction to French Life. Follows course 1. Two hours credit.

Course 3.—MODERN WRITERS.

Readings and reports, covering important writers of the nineteenth and twentieth centuries. Conducted mainly in French. The works read will vary from year to year, so that the course may be taken a second time, with more extensive readings and reports. Four hours credit.

Course 4.—CLASSICAL DRAMA.

Introduction to Corneille, Molière, Racine. Conducted mainly in French. Four hours credit.

Course 5.—SCIENTIFIC FRENCH.

Reader, magazines monographs. Translations and summaries. Two hours credit.

GERMAN.

Course 1.—ELEMENTARY.

Bagster-Collins: First Book in German, lessons I to XXV; Bacon's Vorwaerts. Conducted mainly in German, but with frequent translation into English. Emphasis on forms and agreement. Five hours credit.

Course 2.—INTERMEDIATE.

Bagster-Collins completed. Reading of one simple play and about one hundred pages of simple prose. Memorizing of songs and poems. Emphasis on syntax and idioms. Three hours credit.

Course 2*a*.—ELEMENTARY COMPOSITION.

Composition (Allen), conversation (Pattou). Completion of this course should enable the student to converse on most topics of everyday life. Should follow or be taken with course 2. Two hours credit.

Course 3.—MODERN READINGS.

Prose and poetry. Conducted mainly in German. Extensive reading of such authors as Storm, Keller, Grillparzer, Raabe, Heyse. Three hours credit.

Course 3*a*.—THEMES.

Free reproduction of anecdotes, poems, and stories; oral and written. Should follow course 2*a*. Two hours credit.

Course 4.—CLASSICS.

Schiller's Wilhelm Tell, Goethe's Hermann und Dorothea, Lessing's Minna von Barnhelm. Prerequisite, courses 1 and 2, or equivalent. Three hours credit.

Course 4*a*.—ADVANCED COMPOSITION.

Formal composition; synonyms. Prerequisite, courses 2*a* or 3*a*. Two hours credit.

Course 5.—LYRIC AND BALLAD.

Longer poems of Schiller, Goethe, Uhland, Scheffel, etc. Prerequisite, courses 1 and 2, or equivalent. Three hours credit.

Course 6.—ROMAN AND NOVELLE.

Prose fiction in the nineteenth century. Prerequisite, ten hours of college German, or equivalent. Three hours credit.

Course 7.—OUTLINE OF GERMAN LITERATURE.

Readings, summaries, essays on the history of German literature from the beginning. Illustrated with translations of works of the earlier periods. Prerequisite, twelve hours of college German, or equivalent. Three hours credit.

Course 9.—SCIENTIFIC GERMAN.

Reader, monographs, magazines. Translations and reports in English. Open to those who have had three semesters of college German; to others by special permission of the department. Two hours credit.

Course 51.—SCHILLER.

Jungfrau von Orleans, Maria Stuart, poems. Prerequisite, four semesters of college German. Four hours credit.

Course 52.—GOETHE.

A study of Goethe's life, experience, and philosophy. Reading of part I of Faust, with a study of part II and the Faust literature. Prerequisite, four semesters of college German. Four hours credit. Given in 1916.

Course 53.—NINETEENTH CENTURY WRITERS.

A sketch of German literature during the nineteenth century, with reading of works of representative authors. Outside reading and reports in German. Prerequisite, courses 1, 2, and 3 or 4, or equivalent. Four hours credit. Given in 1916-'17.

Course 54.—CONTEMPORARY LITERATURE.

Outline of German literature since 1888. Works of Hauptmann, Sudermann, Frenssen, and others, will be read in class. Reports in German on other important authors. Prerequisite, four semesters of college German. Four hours credit. Given in 1917.

Course 61.—TEACHING OF GERMAN.

A comparison of the grammar—translaton, natural, and modern direct methods; comparison of leading elementary texts; state adoptions; review of difficulties in pronunciation, grammar, idiom. Prerequisite, five semesters of college German, or equivalent. Two hours credit.

Course 62.—GERMAN PRACTICE TEACHING.

Open to Seniors. Three hours credit.

GERMAN CLUB.

The German Club has been organized as a means and incentive to further German speech and literature. Members who attend regularly and participate actively in the work of the club will receive one-half hour credit per term. Three consecutive absences without a just cause is a bar to this.

LATIN.

Special attenton is called to the difference between courses 1 and 11. Course 1 is the regular beginning course, which is the introduction to the longer course which has proved of unequaled value for a knowledge of the English language and literature as well as for the power of adequate expression. Course 11 is a vocational course for those teachers who feel the need of a Latin foundation but have not time for a longer course. It is intended to give an acquaintance with those features of Latin which most directly concern our daily life, teaching, and reading.

Course 11.—LATIN IN ENGLISH.

A brief study of the influence of Latin on modern languages, especially English, from the standpoint of vocabulary, orthography, grammar, rhetoric, literature, law. Lectures, exercises, and assigned readings. Two hours credit.

Course 1.—ELEMENTARY.

Corresponds to courses I and II in High School. Five hours credit.

Course 2.—CÆSAR.

Corresponds to courses III and IV in High School. Five hours credit.

Course 3.—CICERO'S ORATIONS.

Intensive study of Catiline I and IV, Manilian Law, Archias. Rapid reading in other orations. Composition, rhetoric, Roman public life. Five hours credit.

Course 4.—VERGIL'S ÆNEID.

Four books, with reading of others. Mythology, scansion, memorizing of about 100 lines. Five hours credit.

Course 5.—CICERO'S PHILOSOPHY AND LETTERS.

De Amicitia, De Senectute, selected letters, daily composition. Study of Cicero the man. Roman private life. Prerequisite, 3 or 4. Four hours credit.

Course 6.—LIVY AND HORACE.

(*a*) Livy: selections from books I, XXI, XXII. (*b*) Horace: Odes and Epistles, selections. Prerequisite, eight hours beyond course 2. Four hours, or two for each part.

Course 51.—SUPPLEMENTARY LATIN AND COMPOSITION.

A study of the Latin used as supplementary reading and of high-school composition. Prerequisite, course 5 or 6. Two hours credit.

Course 61.—TEACHERS' COURSE.

Objects, arguments, ways and means, knotty points, texts, illustrations, equipment. Prerequisite, eight hours beyond course 2. Two hours credit.

Course 62.—PRACTICE TEACHING IN LATIN.

Open to seniors who have had 10 hours beyond course 4. Three hours credit.

SPANISH.

Course 1.—ELEMENTARY.

De Vitis' Spanish Grammar, Bransby's Spanish Reader. Forms and syntax. Practice in speaking and writing. Five hours credit.

Course 2.—INTERMEDIATE.

Extensive reading and conversation. Elements of social and business practice. Idioms and subjunctives emphasized. Three hours credit.

Library.

LIBRARY METHODS.

The purpose of this course is to enable the student to use the library effectively and intelligently, without loss of time. It consists of lectures and laboratory work on the proper use of the library; on the classification and location of books; on the use of the card catalogue; on the use of reference books, such as dictionaries, encyclopedias, atlases, gazetteers, handbooks of information, indexes to periodicals. Preparation of reference lists on assigned topics and an original bibliography is required. Open to all students; especially recommended to freshmen. One hour per week for twenty weeks. One hour credit.

Mathematics.

EQUIPMENT. The department has a good collection of models in wood and string illustrating the various geometrical figures. The surveying equipment includes all the necessary transits and levels for the courses offered. The library contains a good collection of books on both pure and applied mathematics.

ADVICE AS TO CHOICE OF COURSES. Those wishing to qualify for teachers of mathematics in junior high schools by the end of the sophomore year are advised to take courses 1 to 4, 10, 14, 15, and 20. Candidates for the degree with mathematics as a major are advised to take courses 1 to 6, 10, 14, 15, 20, and 51 to 53.

Course 1.—ADVANCED ALGEBRA.

This course corresponds to the work of Algebra III of a high school, and is open only to those students who have not taken algebra III in their high-school course. It includes a review of linear and quadratic equations; radicals; involution; evolution; progressions; logarithms; and imaginaries. Two recitations per week. two hours credit.

Course 2.—PLANE AND SOLID GEOMETRY.

The usual theorems and constructions of standard textbooks, and applications to the mensuration of surfaces and solids. Open only to those students who do not offer geometry for entrance. Four recitations per week. Four hours credit.

Course 3.—COLLEGE ALGEBRA.

Rapid review of elementary algebra; graphic representation; complex numbers; series; logarithms; theory of equations; Horner's method. Three recitations per week. Three hours credit. Prerequisite, one and a half units of high-school algebra, and one unit of geometry.

Course 4.—PLANE TRIGONOMETRY.

The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two recitations per week. Two hours credit. Prerequisites, same as for College Algebra.

Course 5.—ANALYTICAL GEOMETRY.

The straight line, circle, parabola, ellipse, and hyperbola; polar coördinates; higher plane curves; elements of solid analytical geometry. Four recitations per week. Four hours credit. Prerequisites, courses 3 and 4.

Course 6.—CALCULUS I.

Elements of differential and integral calculus; derivatives; rates; applications to mechanics; maxima and minima; definite integrals; lengths, areas, and volumes; moment of inertia; fluid pressure; miscellaneous practical applications. The student is taught the use of integral tables in performing the integrations encountered in the problems. Four recitations per week. Four hours credit. Prerequisite, course 5.

Course 10.—INDUSTRIAL MATHEMATICS.

This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks, mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; rough lumber; forestry methods of estimating lumber from trees; house building; power transmission; pulleys; belts; pattern making and foundry work; metal working; tapers, cutting speeds; thread proportions; steam and gas engines. Five recitations per week. Four hours credit. Prerequisite, two units of high-school mathematics, one unit of physics, or an equivalent experience in mechanic arts.

Course 11.—SURVEYING I.

A brief course in the use of surveyor's instruments; laying out of walks, drives, ditches and buildings; calculation of cuts and fills; elements of land surveying. One lecture and four periods of field work per week. Two hours credit. Prerequisite, courses 4 or 10.

Course 12.—SURVEYING II.

A continuation of course 11, involving more advanced work in surveying; adjustment of instruments; topographical surveying; construction and care of roads and pavements. One lecture and four periods of field work per week. Two hours credit. Prerequisite, course 11.

Course 13.—DESCRIPTIVE GEOMETRY.

Solution of problems relating to geometrical magnitudes in space and their representations by drawings. Execution of a large number of original exercises. Three hours credit. Prerequisite, plane and solid geometry, and mechanical drawing.

Course 14.—MATHEMATICAL THEORY OF INVESTMENT.

A course for the students of business and public affairs. Interest, annuities, amortization, sinking funds, and depreciation, building and loan, and life insurance. Two recitations per week. Two hours credit. Prerequisite, nine hours of college mathematics.

Course 20.—ASTRONOMY I.

A general course in descriptive astronomy, dealing with the solar system and theories regarding its evolution; nebulæ; comets; meteors; measurements of the earth; determination of standard time. Two periods per week. Two hours credit. Prerequisites, high-school algebra, geometry and physics.

Course 51.—CALCULUS II.

This course is intended for those who wish a better knowledge of calculus. It includes center of gravity; moments of inertia; center and radius of curvature; series; expansion of functions; successive and partial differentiation and integration; differential equations; hyperbolic functions; solution of higher equations; miscellaneous practical applications. Four recitations per week. Four hours credit. Prerequisite, course 6.

Course 52.—HISTORY OF MATHEMATICS.

The growth and development of mathematics from the historical standpoint. The development of the applications of mathematics to practical affairs. This course also includes a study of the content of present courses in arithmetic, algebra, geometry, unified mathematics. Applied mathematics courses and their value in industrial education. Two periods per week. Two hours credit. Prerequisite, fourteen hours of college mathematics.

Course 53.—ASTRONOMY II.

A continuation of Astronomy I, involving a discussion of the quantitative measurements of celestial bodies. Some experimental work with the spectrometer in determining index of refraction, wave length, and chemical elements in the sun. Observations of the apparent motions of the sun, moon and planets. One lecture and two laboratory periods per week. Two hours credit. Prerequisite, Astronomy I.

Course 54.—STRENGTH OF MATERIALS.

A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shafting; reinforced concrete; resilience of materials. Three periods per week. Two hours credit. Prerequisite, course 4 or 10.

Course 55.—THEORETICAL AND APPLIED MECHANICS.

A study of the laws of statics and dynamics; action of forces upon bodies, and the resultant motions; centers of gravity; moments of inertia; work and energy; impulse, momentum, and impact; friction and lubrication; centrifugal force and the balancing of machines. Four recitations per week. Four hours credit. Prerequisite, course 6.

Methodology.

Course 1.—GENERAL METHODS.

A course in applied psychology, aiming to present teaching as a scientific profession as well as a practical service in giving information and power. Application of all work to the current educational problems of the day is a dominant feature of this course. An indexed scrapbook of notes, bibliography and outlines is kept by each student. Each student makes report from one public school visit.

A thesis upon some phase of school work is presented as part of the credentals for credit. This thesis becomes the property of the department. The class recites the last half of the semester at the hour taken by course 1 in the first half of the semester. Two hours credit.

Course 2.—Grade Teachers' Course.

Besides the text, discussions and investigations into courses of study for elementary grades form a part of this course. Demonstrations of teaching difficult portions given in arithmetic, history and geography. Throughout the year special lectures are given, entitled "The hand as well as the head." From suggestions from these lectures each student prepares a certain number of articles suitable for hand work in the grades, and preceding the holiday vacation a "school bazaar" is held as class recitation, at which time these models are on exhibition, thus showing the possibility of practical application of hand work in the grades. Two hours credit.

Course 3.—Grade Teachers' Course.

A continuation of course 2. Constitution review, and methods of presentation of physiology, grammar, orthography and reading. Special lectures this semester, considering special days, decorations, recreations and experiments. From library assignments a rhetorical manual is compiled, thus aiding the graduate from this course in becoming a forceful factor in professional efficiency beyond the textbook of daily routine. Second semester. Two hours credit.

Course 4.—Primary Methods.

A regular organization, known as the Primary Teachers' League, is maintained by students preparing for primary work. The course is enriched by library reading and special lectures. Each member of the class must prsent a certain number of charts and devices, in addition to notebooks, as credentials for grades. Primary reading; history and development of recognized methods, advantages and disadvantages claimed for each. Number work: requisites, aims, defects, devices. Supplementary work. First semester. Two hours credit.

Course 5.—Primary Methods.

General exercises. Language work: specimens of work from distant schools. Health lessons. Rhetoricals; occupation work; fads and theories. The League sessions during this semester will be addressed by outside educators. Preparatory to receiving certificate from this course, applicant prepares discussion or demonstration of some phase of professional primary teaching. Manuscript of this discussion becomes the property of the department. As in course 4, each member of the class prepares a certain number of models, charts and devices ready to be put into actual service. Through the kindness of the Music Department faculty, valuable assistance will be given in preparation for primary music work. Second semester. Two hours credit.

Music.

This department offers a course as complete as any of the leading conservatories of music. Every teacher in this department is an artist in their special line, which gives pupils advantages they seldom get outside the large cities.

PUBLIC-SCHOOL MUSIC.

Teachers are not only given the training needed for the work of the schools, but may take complete courses for supervisors of school music. Our course not only requires a good knowledge of piano, voice, harmony, counterpoint and sight singing, but each pupil must do practice teaching in the Model School, and directing of school chorus, composed of pupils from the eighth grade of the Model School.

VOICE.

It would be useless to give a fixed list of songs and studies, as each student must have material selected according to individual needs.

1. Voice training; placing of voice, correct breathing, Concone lessons, scales, sight singing, simple songs for phrasing and enunciation.
2. Scales, arpeggois, Concone lessons, Marchesi studies, English and German songs, arias from the oratorios. The student must have some knowledge of piano, be able to read at sight, and finished the harmony and musical history courses.

BRASS AND WOOD WIND INSTRUMENTS.

Students desiring to study cornet, clarinet, oboe, etc., have exceptional advantages here, as the teacher of these instruments is a band conductor and trumpet soloist of years experience. Students must furnish their own instruments and those more advanced are given ensemble work in the school band and orchestra.

GENERAL INFORMATION.

Students will be admitted to the Department of Music at any time during the year, but advantages are generally better if the entrance is made in September, or at the beginning of the new term, since many of the classes are only organized at the beginning of the semester.

Public-school Music for Grade Teachers: A class for the benefit of students or grade teachers who desire to acquire a knowledge of the rudiments of music is organized each semester. The work of this class covers considerable scope of musical theory, sight reading, and methods of school music. This class meets daily, and full credit is given to those who satisfactorily complete the course.

Theory, Harmony, Counterpoint, History: These courses are definitely outlined and are thoroughly practical. These subjects are required of all students completing either piano, voice, or supervisors' course.

PIANO COURSE.

Course 1.—One to three years.

Kohler's Method, Book I. Streabog, Twelve Easy Studies. Sixteen melodious studies for independence of fingers, by Frank Lyunes. Scale work in the easier keys, special attention being made immediately to touch and tone production, fingering. Duvernoy, School of Mechanism; Clementi's op. 120. Sonatinas; Bertine, op. 100; Twenty-five Studies with Octaves. Burgmuller, op. 100; Gurlitt, op. 107; Loeschhorn, op. 52; Melodious Studies; Heller Studies.

Course 2.—One to two years.

Loeschhorn, op. 66, Studies. Leesuppey, op. 26, Studies. Czerny, op. 299, four books. Bach-Busoni, Two-part Inventions. Sonatina Album, unabridged edition. Haydn Sonatas. Bachmann, Improvisations. Concone, Twenty-five Studies for Style and Expression. Cramer, Fifty Studies, by Von Bulow. Bach-Busoni, Two and Three-part Inventions. Bach, Twenty-one Preludes. Czerny, op. 740. Kullak, Octave Studies, Books 1, 2, 3. Bach, French Suites. Mozart Sonatas. Beethoven; easier Chopin Preludes; Easier Preludes.

Course 3.—One to two years.

Clementi's Gradus ad Parnassum; Tausig, Daily Studies; Jossephy's Daily Studies for Dexterity. Bach, English Suites; Bach's Well-tempered Clavichord. Schubert, Impromptus. Chopin's etudes, preludes, waltzes, scherzo, mazurkas, Schumann, pappillous. Liszt, Rhaphodies; Liszt, Concert Etudes; Prelude and Fugue, Bach-Liszt; Chromatic Fantasia and Fugu, Bach-Busoni. Beethoven Sonatas. Thirty-two variations, Fourth Concerto, Schumann Carnival, op. 12. Chopin, Sonata or Concerto. Brahm's Rhapsodies, 1 and 2. Liszt, Concert Etudes. Mendelssohn, Concerto. Recitals given every six weeks, in which all pupils must appear, playing from memory. Two recitals given each year, in which only advanced pupils will play. Ensemble piano work will be given special attention, in which quartettes (two pianos, eight hands; two pianos, four hands), trios and duets and concertos will be played.

HARMONY.

First Year.—Work in scales and intervals. Chord construction. Four-part harmony writing, with the study of triads and their inversions. Chords of the seventh as far as modulation.

Second Year.—Chromatically altered chords; modulation, suspensions, and organ point. Four-part harmony writing from given melody; counterpoint; orchestration.

MUSICAL HISTORY.

Mathews' text used. Study of the music of Egyptians, Hebrews, Greeks, Hindoos, Arabs, Chinese, Japanese, Celts. The development of polyphony, counterpoint, canon, etc. Schools of France, Netherlands, Italy and the Gallo-Belgic school. Beginning of opera; composers; study of the piano and pipe organ. Study of the different operas and oratorios. This subject is given in lectures, and is free to students studying music of any kind.

TUITION.

Piano, one lesson per week, by Miss Concannon, per term of nine weeks	$13.50
Piano, two lessons per week, by Miss Concannon, per term of nine weeks	18.00
Piano, one lesson per week, by Miss Leavitt, per term of nine weeks	9.00
Piano, two lessons per week, by Miss Leavitt, per term of nine weeks	13.50
Voice, one lesson per week, per term of nine weeks	9.00
Voice, two lessons per week, per term of nine weeks	18.00
Violin, one lesson per week, per term of nine weeks	9.00
Violin, two lessons per week, per term of nine weeks	18.00
Concert, brass and wood wind instruments, one lesson per week, per term of nine weeks	9.00
Cornet, brass and wood wind instruments, two lessons per week, per term of nine weeks	18.00
Harmony, class lessons, two lessons per week, nine weeks	4.50
Private harmony lessons, one lesson per week, nine weeks	4.50
Piano rent, two hours daily for a term of nine weeks	1.50

MUSICAL ORGANIZATIONS.

The Male Glee Club. This club is chosen from the more able singers of the school. They meet twice each week.

The Polymnia Club. This is the girls' glee club, whose organization is controlled in a like manner to the Male Glee Club.

Orchestra. The orchestra is composed of students and musicians from the city, who have had years of experience. This organization gives concerts during the school year.

The Band. Those who have instruments and have had some experience are admitted to this organization.

The Chorus. The chorus is composed largely of the two glee clubs; however, it is open to all students who are able to sing and are somewhat proficient in reading music at sight. In this work, parts or the whole of the standard cantatas, oratorios, etc., are used, and the chorus very frequently appears in public during the year. The value of this practice can not be overestimated, and it is indispensable to vocal students and school-music teachers. There is no expense connected with this work.

RECITALS AND CONCERTS.

At frequent intervals during the school year public and private recitals and concerts are given in which all capable students are required to take part. These concerts are usually aided by the various student organizations, and are becoming very attractive features of the school year. Very frequently other concerts and entertainments by reputable artists are given in the Normal auditorium and the city, thus affording students an opportunity of hearing plenty of good music.

Classes and Organizations Free to Students:
The Male Glee Club—rehearsals twice weekly.
The Polymnia Club (girls)—rehearsals twice weekly.
Orchestra—rehearsals once a week.
Band—rehearsals once a week.
Chorus practice—rehearsals as decided upon.
Public-school music, sight reading—recitations daily.

VIOLIN COURSE.

It is impossible to write out exactly the course of studies pursued in this department. Each pupil will receive those exercises and pieces which the particular case requires. Candidates for certificates must give a good performance of a piece approximating, in technical and music difficulty, works like concertos by Viotty, Rode, De Beriot, and they must have studied the etudes by Dreutzer, Dont, scales by Halie. Candidates for diplomas must be equal to the interpretation of solo sonatas by Bach, concertos by Vieuxtemps, Mozart, Wieniawsky, Spohr, Mendelssohn, and some modern compositions, as Kreisler and Saent-Saëns.

Physical Sciences.

CHEMISTRY.

Course 1.—GENERAL CHEMISTRY.

This course consists of recitations, lectures and laboratory work upon the fundamental principles of this science, together with the application of chemistry to various arts and industries. Among the practical subjects considered are the chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils and varnishes, water, air, fuels, and the elementary principles of chemistry involved in food preparation. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. First term, freshman year. Four hours credit.

Course 2.—QUALITATIVE ANALYSIS.

This course consists largely of laboratory work. Emphasis is placed upon the analysis and properties of those substances that are used in the industrial arts, as oils, pigments, paints, varnishes, fuels, and alloys. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Four hours credit.

Course 3.—QUANTITATIVE ANALYSIS.

This is principally a laboratory course, including both gravimetric and volumetric analysis, supplemented by lectures and recitations. The calibration of glassware and the study of the relation of chemistry to other sciences, along with the various vocations of life, are included in this course. Prerquisite, Chemistry 1 and 2. Two or four hours, depending on the amount of work done.

Course 10.—FOOD CHEMISTRY.

A special course for domestic science students. This course consists in the identification of food adulterants and preservatives, the effect of these upon the body, the analysis and relation of the different classes of foods, and includes a study of organic chemistry related to food. Prerequisite, Chemistry 1. Four hours credit.

Course 11.—AGRICULTURAL CHEMISTRY.

This course is arranged for students of agriculture, and consists of a study of the chemical changes involved in soil fertility and plant growth, the analysis of various plant products and fertilizers, and the study of problems of agriculture of a chemical nature. Two or four hours credit.

Course 15.—LECTURE DEMONSTRATIONS IN PHYSICAL SCIENCES.

This course is planned for grade teachers and consists of easy demonstrations, which may be performed by the teacher to illustrate some of the scientific principles involved in the study of such subjects as air, water, fire, food, clothing, etc. Two hours credit.

Course 16.—HISTORY AND METHODS IN PHYSICAL SCIENCE.

This is a course of lectures given by the different teachers in the department. These lectures consist of a nontechnical discussion of the most important discoveries in the physical sciences. The applications of these principles for efficiency is emphasized. One or two hours credit according to the work done. Prerequisite, 15 hours Physical Science.

Course 51.—ORGANIC CHEMISTRY.

A general course in organic chemistry, including lectures, recitations and laboratory work. This course emphasizes the properties and uses of the organic compounds found in our industrial activities, together with the underlying chemical principles involved. Prerequisite, Chemistry 1. Four hours credit.

Course 52.—ADVANCED GENERAL CHEMISTRY.

This course consists of lectures, recitations, readings and laboratory work. The elementary principles of physical chemistry are introduced in this course. Emphasis is placed upon a thorough understanding of the laws involved in general chemistry. The basal nature of these principles to the historical development of chemistry is considered. The aim is to lay a solid foundation for future work in the subject. Prerequisite, Chemistry 1. Four hours credit.

Course 53.—ADVANCED QUANTITATIVE ANALYSIS.

This course consists of careful analyses of ores, water, fuels, etc. Prerequisite, course 1, 2 and 3. Two or four hours credit.

Course 54.—INDUSTRIAL CHEMISTRY.

As the name implies, this course consists of a study of various chemical industries and the part the chemist plays in the different lines of manufacture. A student may choose a certain field of work as a study of fuels, waters, cements, clay, soaps, etc., and devote a large part of his time to this particular subject. Prerequisite, Chemistry 1, 2, 3 and 51. Four hours credit.

Course 60.—TEXTILE CHEMISTRY.

This course deals with the chemical examination and identification of the different textiles, and a brief study of dyeing. Prerequisite, Chemistry 1. Two hours credit.

Course 61.—HOUSEHOLD CHEMISTRY.

This course consists in the application of chemistry in the household, involving sanitation, cleaning and removal of stains. Prerequisite, Chemistry 1. Two hours credit.

Course 62.—PHYSIOLOGICAL CHEMISTRY.

This course consists of a study of the chemical changes involved in the cooking, digestion and absorption of foods; the chemistry of the blood and tissues of the body. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Two hours credit.

Course 63.—CHEMISTRY OF NUTRITION.

This course consists of a study of the composition of the different classes of food, their function in nutrition, dietaries, and food economy. Prerequisite, Chemistry 1 and 10, and Organic Chemistry. Two hours credit.

Physics.

Course 21.—PLUMBING AND PIPE FITTING.

A study of the fundamental principles of plumbing and pipe-fitting and of modern sanitary appliances for the home. The course includes designs and practice work as well as recitations and lectures. Prerequisite, high school physics. Two hours credit.

Course 22.—HEATING AND VENTILATION.

The principles of operation underlying the various modern systems of heating and ventilation installed in homes and school buildings form the basis of this course. It includes practical problems in the designing of heating and ventilating systems for buildings. Prerequisite, high-school physics and course 21. Two hours credit.

Course 23.—ELECTRIC WIRING.

A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Prerequisite, high-school physics. Two or four hours credit.

Course 24.—ELECTRIC WIRING II (ILLUMINATION).

A continuation of course 23. A practical course in the designing of illumination distribution for all purposes—home, school, business house, and street lighting. It includes a study of the various types of light sources, shades, and reflectors and their adaptability for various classes of service. Prerequisite, course 23. Two hours credit.

Course 25.—GAS ENGINES I.

A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics or in automobiles. Laboratory and lectures. Prerequisite, high-school physics. Two hours credit.

Course 26.—GAS ENGINES II (AUTOMOBILE ELECTRICITY).

A companion course to course 25. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts. Prerequisite, course 25. Two hours credit.

Course 27.—ARMATURE WINDING.

A practical course in the testing and repairing of defective and burned-out electrical machinery. Prerequisite, 10 hours college physics, One or two hours credit.

Course 28.—WIRELESS TELEGRAPHY.

The theory and practice of radio-communication. Prerequisite, high-school physics. Two hours credit.

Course 30.—GENERAL PHYSICS.

Designed for those wishing a brief course in college physics. It includes a rapid survey of all the branches of physics, interspersed with demonstrations and laboratory exercises which will be of special value to those going out to teach high-school physics. Four hours credit.

Course 31.—MECHANICS AND HEAT.

This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in building, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, high-school physics. Four hours credit.

Course 32.—SOUND AND LIGHT.

Lectures and laboratory work in the general theory of sound and light. This course, with courses 31 and 33, constitute the equivalent of a one-year course in college physics. Prerequisite, course 31. Two hours credit.

Course 33.—ELECTRICAL MACHINERY.

The theory of direct and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment, rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, course 32. Four hours credit.

Course 71.—HOUSEHOLD PHYSICS.

A course for girls interested in home economics. It includes an inquiry into physics as applied to the problems of sewage disposal, lighting, heating, ventilating, cooking, house cleaning, laundering, etc. A careful study is made of modern labor-saving, sanitary and economical appliances for the home. Prerequisite, high-school physics. Two hours credit.

GEOLOGY.

Course 40.

This course is planned to acquaint the student with the work of the geologist and to enable him to appreciate the relations of this subject to our industrial life. Emphasis is placed upon the industrial and economic side of geology. Among the subjects considered may be mentioned the distribution and supply of fuels; the geologic processes in soil building; the raw material of many of our manufacturing industries; road building; and the making and reading of geologic maps, together with their economic value. Four hours credit.

Course 80.—ECONOMIC GEOLOGY.

As the name implies, this course deals with the economic resources of the United States from the viewpoint of geology. The mineral products as iron and the other common metals, clays, coal, oil and gas, building stones, cement materials, gypsum, fertilizers, water, and other products are studied. The distribution of these resources, mode of occurrence, origin, uses, production and conservation are considered in this course. Four hours credit.

Physical Education.

The Department of Physical Education exercises supervision over all gymnastic, athletic and play activities in the institution, and offers courses in the theory and practice of physical education. The department aims to minister to the physical needs of all students through hygienic, educative and recreative activities. Certain special courses are designed to train students in the theory and methods of physical education.

A physical examination is given all students. Assignments in physical exercise are made on the basis of this examination.

The athletics of the school are directed by the athletic council, composed of five students and five faculty members. Teams are maintained in all major sports for men. There are no intercollegiate or inter-school games for women.

GIRLS GYMNASIUM COSTUME. The gymnasium bloomers are of black serge (light weight) made full, plaited at the belt with plaits sewed down five or six inches, elastic at the knee. They may be made at home or bought at the dry-goods stores at Pittsburg. The middies are of white wash goods made regular navy style, with large collars, sleeves that may be rolled up, and with no color upon them anywhere. Woolen middies may be worn during the winter months.

Black middy ties and black stockings are used.

For courses 1, 2 and 6 black ballet slippers for the dancing and white tennis shoes (camp fire) for the outdoor work are needed. For course 5 the ballet shoes only are used.

VOLUNTARY EXERCISE. From 4:20 to 6 p. m. each afternoon women students in the College or high school may come out to play basket ball, tennis, volley ball and baseball under the supervision of the physical director for women.

Interclass and intramural tournaments and leagues are held for both men and women students in the following games: Basket ball, volley ball and baseball.

Courses 1 and 2 are required of all freshmen in all courses for the life diploma.

Course 1.—PHYSICAL EXERCISE.

This is a course of body-building nature.

Men:

Three hours of exercise per week. One hour credit. The course consists of:

(*a*) One hour of outdoor games while the weather permits. One hour of corrective calisthenics and gymnastic dancing. One hour of apparatus work, pyramid building and tumbling.

(*b*) Elective work in intercollegiate athletics for the length of season only in place of (*a*).

Women:

Three hours of exercise per week. One hour credit. The course consists of:

(*a*) One hour of games, from simple to complex, taught for health and recreation of the student and in such a way that the student may use these games in any sort of playground work. The last of the term the coaching of basket ball, volley ball, baseball and tennis is given.

(*b*) One hour of folk dancing with the beginning of esthetic work.

(*c*) One hour of calisthenics, corrective in nature, dealing with common faults in posture and function of spine, thorax, shoulder, girdle, pelvis and feet.

Course 2.—PHYSICAL EXERCISE.

Three hours of exercise per week. One hour credit.

Men:

Continuation of work under (*a*) in course 1. At close of annual gymnastic exhibition all work is out of doors in track or baseball.

Women:

Continuation of course 1, but more advanced. Prerequisite, course 1.

Course 3.—ELEMENTARY SCHOOL PHYSICAL EDUCATION.

A course in physical education for the grammar grades. Courses 1 and 2 are prerequisites. The work consists of Swedish gymnastics for schoolroom use, gymnastic games, nursery rhymes, folk dances and story plays. Class meets Tuesday and Thursday. Practice teaching in Training School at ten o'clock, Monday and Friday in schoolroom, and Wednesday in gymnasium. An elective course. Two hours credit. Given first and second terms and summer session.

Course 4.—PLAY AND PLAYGROUND METHODS.

Courses 1 and 2 prerequisite. Play equipment and management will be considered. Drawings, estimates and specifications for such play apparatus as can be made by high-school manual-training departments, as given by Leland, forms part of the work. A graded course of games based on Bancroft's work, with emphasis on the many kinds of ball games, especially long base, playground ball, soccer, captain ball, volley ball, and basket ball. The athletic badge competition, group athletic and grade-school track meets form part of the instruction. A course for teachers who expect to do playground work in the graded school or supervisory work in the public schools. Open to men and women. An elective course. Two hours credit. Given first and second terms and summer session.

Course 5.—CLASSIC OR ESTHETIC EXERCISES.

Prerequisite, course 1 and 2, or equivalent. Material will be given which can be used for fete days, festivals and pageants. For women students. Elective. The course will continue throughout the year with different work each term. Two periods weekly. One hour credit per term; two hours credit per year.

Course 6.

Prerequisite, course 1 or 2, or equivalent. Different work each term throughout the year, based upon the outlines of courses 1 and 2, but more advanced. Three periods a week. One hour credit per term.

Course 8.—THEORY OF PHYSICAL EDUCATION.

This is a course in the essential factors of physical education. The following topics are discussed: The physiology of exercise; massage; the systems of physical education; the practice of physical education on playgrounds, in schools and colleges; the physical education of the blind, the deaf, and mental defectives. Each student will be especially trained on the following points: nasal obstruction, abnormal sight and hearing, blood pressure, treatment of bad posture, and the efficiency tests. Prerequisite, courses 1 and 2. Text: McKenzie's Exercise in Education and Medicine. Elective. Four periods weekly. Four hours credit.

Physical training for the Senior High School consists of indoor and outdoor gymnastics, folk play, and games.

Physical training for the Junior High School consists of gymnastic lessons, rhythmic exercises, play and games.

Public Speaking and Expression.

This course is so outlined as to be both professional and practical in its scope. It develops entertainers, public speakers, and clear, definite, thorough teachers of English, public speaking and expression. It meets the needs of all who desire the ability to express themselves clearly and effectively. The work is scientific, clear, definite and concentrated.

Course 1.—PUBLIC SPEAKING.

Course one deals with a study of orators and oratory, ancient and modern. Forms of discourse, their use, and some practice in their delivery. Four hours credit.

Course 2.—PUBLIC SPEAKING.

This course deals with the composition and delivery of addresses. These principles are made clear to the student through the composition and delivery of his own thought before an audience. Four hours credit.

Courses 1 and 2 develop in the student the correct, clear, concise and effective delivery of his own thought.

Course 3.—PHILOSOPHY OF EXPRESSION.

This course sets forth the basic principles underlying all manifestations in art and life. Voice placing, deep breathing, breath control, range, intonation, inflections, melody in speech. The body is treated as an instrument, training it to be willingly obedient to the mind. Philosophy of expression; voice production; expressive movement; repertoire. Four hours credit.

Course 4.—SHAKESPEAREAN TEXT.

This course takes up the study and interpretation of at least two Shakespeare plays. Four hours credit.

Course 5.—INTERPRETATIVE FORMS.

Prerequisite, course 3. The literature which can be vocally interpreted is found in certain discoverable forms, which by their very nature demand a certain manner of interpretation. It is the aim of this course to familiarize the student with these different forms and their interpretation. Interpretative forms; philosophy of expression; expressive movement; pantomime. Four hours credit.

Course 6.—LITERARY INTERPRETATION.

The course takes up the works of Lowell, Longfellow, Dickens and Kipling. Voice color and impersonation. Four hours credit.

Course 11.—DEBATE AND ARGUMENTATION.

This course is intended to provide mainly instruction and practice in the preparation and delivery of argumentative work. Four briefs and two extended arguments are required. While the work conveniently takes the form of debates, it is not the object of the course merely to train debaters. Two hours credit.

Course 12.—NORMAL COURSE.

This course teaches the pedagogy of expression; methods of teaching it in the grades and high school; how to make an expression department in high school or college contributive to the English department. Two hours credit.

NOTE.—Those taking courses 2 and 3 do not need to take course 1.

Course 51.—EXPRESSION.

Prerequisite, course 5. This course is a continuation of course 5, with much practice in the interpretation of different forms of literature. Four hours credit.

Course 53.—ART AND LIFE LECTURES.

The work here grows more psychologic and philosophic. The course points out the relations of art and life. Two hours credit.

Course 54.—MASTERPIECES.

This course takes up the works of Tennyson, Browning and the Bible. Four hours credit.

Course 56.—MODERN DRAMA AND POETRY.

This course undertakes a study of the drama and poetry which reflect with greatest truth the dominant note in our modern thought, the purpose of the course being to acquaint the student with worthwhile drama and poetry of our day. Four hours credit.

Normal High School.

ADMISSION.

The Normal High School is maintained and intended primarily for persons who have not had, at high-school age, opportunities to do high-school work, and who have had teaching experience or who intend to become teachers. Persons who have high-school advantages in their home towns are not encouraged to enter.

Students may be admitted to the Secondary School of the State Manual Training Normal in any one of the following ways:

(1) Students who hold county diplomas, or who present other credentials indicating the combination of eighth-grade work with no evidence of additional study or maturity, will be admitted, without examination, to the *first year* Normal High School Course.

(2) Students who hold third-grade teachers' certificates will be admitted, without examination, to the *second year* of the Normal High School Course.

(3) Students of maturity holding certificates of second grade will be admitted, without examination, to the *third year* Normal High School Course.

(4) Students of maturity holding first-grade certificates will be admitted, without examination, to the *fourth year* Normal High School Course.

(5) Students not meeting any of the above requirements may be admitted, by examination, to such classes as their preparation warrants.

NOTE.—Students admitted under (2) or (3) will be required to complete work in which they are deficient.

GRADUATION.

For graduation from the Secondary School a student must have completed sixteen units' work. A unit is a year's work in one subject, reciting five times per week.

CONTEST.

The students in this department hold regular contests in debate, declamation, and essay. Gold medals are offered as prizes to the winners in these contests. These contests offer splendid opportunity to develop careful thinking and accurate and elegant expression.

RUSSONIAN SOCIETY.

This society is one of the liveliest literary organizations in the institution. It is maintained wholly by and in the interest of the Secondary students. It is not only an excellent place for literary training, but it looks well to the social life of its members.

RECEPTIONS.

During the year several social functions are held under the direction of special leaders, which are not only a source of great pleasure and delight, but the students learn the best of social etiquette. The object is to fully prepare the student to appear at ease in any society, and to qualify him to take part in the social life of the community where he may go as a teacher.

ATHLETICS.

Special work in athletics is organized for these students. They have their athletic teams and engage in contests with neighboring schools.

COUNTY EXAMINATION COURSES.

Special review courses will be offered for all teachers who desire to raise the grade of their county certificate. These courses will be offered during the last half of the second semester and in the summer term. These courses will not only prepare the student for the county examination, but will give him credit toward a state certificate.

High School Courses.

JUNIOR HIGH SCHOOL.

FIRST YEAR.

First Semester.		Second Semester.	
Required subjects:		*Required subjects:*	
English	5	English	5
Arithmetic	5	Arithmetic	5
History	5	History	5
Spelling	5	Hygiene	3
Geography	3	Penmanship	2
Penmanship	2	Music	3
Music	3		
Electives (one):		*Electives (one):*	
Manual Training	5	Manual Training	5
Sewing	5	Printing	5
Printing	5	Sewing	5
Arts and Crafts	3	Arts and Crafts	3

SECOND YEAR.

First Semester.		Second Semester.	
Required subjects:		*Required subjects:*	
English	5	English	5
U. S. History	5	History	5
Gen. Mathematics	5	Gen. Mathematics	5
Music	3	Music	3
Penmanship	2	Physical Training	2
Physical Training	2		
Electives (two):		*Electives (two):*	
Latin		Latin	
German		German	
Elementary Science	3	Science	
Manual Training	5	Manual Training	
Sewing, Cooking		Sewing, Cooking	
Arts and Crafts		Arts and Crafts	

THIRD YEAR.

First Semester.		Second Semester.	
Required subjects:		*Required subjects:*	
English I		English II	
Gen. Mathematics I or Algebra I		Gen. Mathematics II or Algebra II	
Electives (two):		*Electives (two):*	
Drawing		Drawing	
History I		History II	
Latin		Latin	
German I		German II	
Physical Geography I		Physical Geography II	
Manual Training—Bench Woodwork		Manual Training—Joinery	
Sewing, Domestic Arts I		Sewing, Domestic Arts II	

SENIOR HIGH SCHOOL.

FIRST YEAR.

FIRST SEMESTER.

Required subjects:
- English III
- Mathematics III or Geometry I
- Biology I

Electives (one):
- History III
- Latin I
- German III
- Drawing
- Manual Training—Woodturning
- Sewing—Domestic Arts III

SECOND SEMESTER.

Required subjects:
- English IV
- Mathematics IV or Geometry II
- Biology II

Electives (one):
- History IV
- Latin II
- German IV
- Drawing
- Manual Training—Pattern Making
- Sewing—Domestic Arts IV

SECOND YEAR.

FIRST SEMESTER.

Required subjects:
- English V
- Physics I
- Physical Training

Electives (two):
- History V
- German V
- Latin III
- Agriculture
- Drawing
- Manual Training—Forging
- Cooking—Domestic Science I
- Arithmetic

SECOND SEMESTER.

Required subjects:
- English VI
- Physics II
- Physical Training

Electives (two):
- History VI
- German VI
- Latin IV
- Agriculture
- Drawing
- Manual Training—Foundry
- Cooking—Domestic Science II
- Algebra III

THIRD YEAR.

FIRST SEMESTER.

Required subjects:
- American History VII
- Physical Training

Electives (three):
- Chemistry
- Physiology
- Drawing
- Manual Training—Elem. Machine
- English VII
- Cooking—Domestic Science III
- Management and Methods

SECOND SEMESTER.

Required subjects:
- American History VIII
- Physical Training
- Civics IX

Electives (two):
- Chemistry
- Psychology
- Drawing
- Manual Training—Elem. Machine
- Cooking—Domestic Science IV
- Arithmetic

SUBJECTS BY GROUPS.

English, 3 units—required.

Mathematics, 2 units—required.

Algebra or General Mathematics, 1 unit
Geometry or General Mathematics, 1 unit.

Science, 4½ units—2 units required.

Biology, 1 unit.
Physics, 1 unit.
Chemistry, 1 unit.
Physical Geography, 1 unit.
Physiology, ½ unit.
Agriculture, 1 unit.

History, 3½ units—1½ units required.

Ancient History, 1 unit.
Medieval History, Modern History, 1 unit.
American History, 1 unit.
Civics, ½ unit.
English History, 1 unit.

Language, 5 units—none required.

Latin, 2 units.
German, 3 units.

Vocational Subjects—none required.

Domestic Art, 2 units (Drawing, 1 unit).
Domestic Science, 2 units.
Industrial Art, 4 units (Drawing, 2 units).

Professional Subjects, 1 unit required for certificate.

Psychology, ½ unit.
Management and Methods, ½ unit.

Students asking for One-year State Certificate should elect Psychology, Methods and Management, and Arithmetic. In addition to the professional work, music and drawing advised.

Students electing from the language or vocational group should complete at least two units from that group. Credit for less than one unit will not be given in those groups.

Agriculture.

The object of the high-school work in agriculture is to prepare young people to teach agriculture in our rural schools. To this end, therefore, the courses are short, practical, and contain a minimum amount of theoretical matter.

The campus and gardens consist of fifty acres. About twenty-five acres of this ground is well adapted for experimental and demonstration work in horticulture, and agriculture. A large permanent garden is being planned, and prospective agricultural teachers will be given an opportunity to direct the work of the Model School children.

A part of the garden will be devoted to vegetable growing by the domestic science students. Students are now given an ample opportunity to do work in plant propagation and plant breeding.

Students are arranged in sections and do farm work of some kind each week. By working under the agriculturist an opportunity is afforded to show the pupil the application of the principles learned in the classroom, and at the same time to become familiar with the details of farm life and farm practice.

Course 1.—ELEMENTARY AGRICULTURE.

This is an elementary course in agriculture designed especially for those who wish to cover the whole subject of agriculture in one course, and gives a limited preparation for teaching the subject in the rural schools. Spring and summer terms. One-half unit credit.

Course 2.—HORTICULTURE.

The course is practical rather than theoretical. Lectures will be given on vegetable gardening, fruit growing, floriculture, and the propagation of trees and shrubs. One-half unit credit.

Course 3.—ANIMAL HUSBANDRY.

In this course the students are given lectures in stock judging, breeds of farm animals, breeding, and the feeding of farm animals. Third year, first term. One-half unit credit.

Course 4.—FARM DAIRYING.

Lectures are given on the various types of dairy cattle, selection of the individual cow, management of dairy cattle, butter making, and the packing and marketing of dairy products. One-half unit credit.

Course 5.—SCHOOL GARDENING.

All students intending to teach agriculture should take this course. In addition to the regular Experiment Station, the school maintains a school garden, in which the students will do all work in preparing the soil and planting the crop. In the school garden will be found all varieties of vegetables, ornamental grasses, shrubs, and forestry.

In this course the student will be given an opportunity to direct children in the Model School and will receive valuable experience in handling and laying out school gardens. Fourth year, spring term. One-half unit credit.

Biological Sciences.

The purpose of the courses in biology is to give the student that knowledge of botany, zoölogy, physiology and bacteriology which he needs in order to produce the best conditions of life for himself and for those depending on him. It is impossible to live effectively or to control the biological forces conditioning the existence not only of man, but of plants and animals as well, without a knowledge of biological laws.

The courses are designed especially with these ends in view. The laboratories are well equipped to offer the work. The equipment consists of microscopes, aquaria, biology cases, microscopic slides, and a good teaching museum.

Courses 1 and 2.—GENERAL BIOLOGY.

These courses are designed to serve as an introduction to the elementary forms and forces of living nature. Here the student becomes acquainted with the common animals and plants that enter into the practical activities of the home and farm. Much of the work in the fall and spring is done out of doors. Required of first-year students in all groups. Daily for one year. One unit credit.

Course 3.—NATURE STUDY.

This course aims to adapt zoölogy and botany to elementary instruction, and is designed especially for teachers in the city schools. It attempts to answer the question, "What knowledge of living forms is suitable to children between the ages of six and fifteen?" The animal and plant life of this locality is fairly abundant and varied. The agricultural plot furnishes an excellent opportunity for gardening and horticulture. Daily, spring and summer terms, twenty weeks. One-half unit credit.

Course 4.—ELEMENTARY ZOÖLOGY.

This course presents a connected study of the function and structure of animal types selected to illustrate the development of the animal kingdom. Systematic work is done with the insects and different groups of the vertebrates. One-half or one unit credit.

Course 5.—ELEMENTARY PHYSIOLOGY.

This is a course in elementary physiology and hygiene designed especially for the elementary-school teacher. It deals mainly with the function of the organs of the human body and the hygienic conditions under which they do the best work. Attention is given to elementary-school hygiene. One-half unit credit.

Commercial Teachers' Course.

A certificate is given for the completion of this course; also, two years' college work is given in commerce, leading to a Life Diploma. See page 45.

First Year.

First semester:		*Second semester:*	
Bookkeeping	½	Bookkeeping and Accounting,	½
Business Arithmetic	½	Business Arithmetic	½
Commercial Geography	½	Business Law	½
Penmanship	¼	Penmanship	¼
Elect	¼	Adv. Grammar	½

Second Year.

First semester:		*Second semester:*	
Shorthand	½	Dictation and Office Practice,	½
Applied Business English	½	Commercial Correspondence	½
Spelling and Bus. forms	½	Typewriting	½
Typewriting	½	Elect	1/1

BOOKKEEPING.

General law of debit and credit. Use of journal, cash book, purchase book, sales book, and making of all business statements. Handling of notes, drafts, and checks. Shipments and consignments. Some corporation work. Year subject. One unit credit.

BUSINESS ARITHMETIC.

Solving actual business problems. Working time sheets. Practical measurements. Study of short methods. Year subject. One unit credit.

PENMANSHIP.

Developing of a plain, legible, rapid, business hand. Year subject. Half unit.

SHORTHAND.

Complete study of the manual. Text, Gregg. Twenty weeks. Half unit.

DICTATION AND OFFICE PRACTICE.

Advanced shorthand. Taking of dictation from new matter. Working speed to 100 words per minute. Court testimony. Doing actual office work. Twenty weeks. Half unit.

APPLIED BUSINESS ENGLISH.

Careful study of business phrases. Rules for punctuation, and drills in their application. Twenty weeks. Half unit.

COMMERCIAL CORRESPONDENCE.

Study of letter forms. Writing all classes of business letters with enclosures. Learn to do by doing. Careful study of postal regulations and different classes of mail matter. Twenty weeks. Half unit.

TYPEWRITING.

Writing of charts. Care and repair of machines. Drills for speed. Working of speed to forty words per minute. Year subject. One unit.

SPELLING AND BUSINESS FORMS.

Study of roots, prefixes and suffixes. Spelling drills. Study of checks, notes, drafts, deeds, mortgages, and writing of same. Twenty weeks. Half unit.

Drawing.

JUNIOR HIGH SCHOOL.

The drawing courses in the Junior High School are planned to meet the needs of the Departments of Industrial Arts and Household Economy. The drawing instructions are adapted to meet the needs of the pupil in his special work. Certain common fundamentals are emphasized throughout the course to give unity to the progress while acquiring technic and skill. The methods used will give special attention to securing definite results which will be of practical service, and not to doing abstract exercises in drawing. The work of boys will be fitted to meet the demands of the shop work, and that of the girls will acquire fundamentals of home decoration and costume design.

SENIOR HIGH SCHOOL.

The drawing courses in the Senior High School are to meet the needs of pupils who are preparing themselves for higher education or for definite professions in practical life. The acquirement of skill and technic will be emphasized with development of taste and appreciation. The work of the boys will cover the field of practical mechanical drawing, developing into architectural and home planning, or into machine drawing. The work of the girls will be developed among lines leading toward a most thorough understanding of the principles underlying home decoration and costume design as well as in art appreciation.

Course 1.—FREE-HAND DRAWING FOR BOYS.

A course for the development of technique and the elementary principles of working drawings, lettering and shop sketching.

Course 2.—FREE-HAND DRAWING FOR GIRLS.

Pictorial and decorative drawing in outline and in color. Still life, groups and objects are used to develop an understanding of perspective history of art.

Course 3.—DESIGN FOR BOYS.

Principles of design, spacing and proportion applied to the construction of objects suitable for shop use.

Course 4.—DESIGN FOR GIRLS.

Principles of design, lines of grace and beauty, spacing and proportions. Units, borders, conventionalization of natural forms adapted for use in the sewing department. Study of ornament.

Course 5.—PENCIL, CHARCOAL, PEN AND INK AND COLOR OUTLINE AND LIGHT AND SHADE DRAWING.

Perspective principles with shades and shadows. History of Egyptian and Greek architecture.

Course 6.—APPLIED DESIGN.

Application of the principles of design to actual problems to be constructed in the shop or sewing department.

Course 7.—ELEMENTARY MECHANICAL DRAWING.

The student will attain proficiency in the use of instruments. A knowledge of orthographic projections, sections, developments, working drawings, etc., as applied to practical work is given.

Course 8.—ADVANCED MECHANICAL DRAWING.

A continuation of course 7 in which standard drawing room conventions are studied and applied in the drawing of machine parts. Lettering, tracing, and blue-printing.

Course 9.—MACHINE DRAWING.

This course is designed to round out the work in mechanical drawing as it relates to the metal trades. The use of conventions, standards and simple rules of empirical design are used in the designing of problems for construction in the shop.

Course 10.—ARCHITECTURAL DRAWING.

Study of the classic orders of architecture, architectural design, plans and elevations of a simple cottage. Reading and lectures. Arrangement of rooms for convenience. Houses under process of construction are observed, and the work of the classroom developed from notes and sketches.

Course I.—First year, first term.

1. Review of principles learned in elementary school, and their application upon a problem in simple handwork, such as a fancy apron, a bag, etc.
2. Care and use of sewing machine. Simple machine problems; a kimono, kimono nightgown, bungalow paton, etc.
3. Begin study of textile fibers and their manufacture, with the emphasis placed upon economic purchasing.
4. Simple embroidery stitches applied upon Christmas work.
5. Lessons upon personal hygiene.

(Free-hand drafting of patterns for apron, kimono, nightgown.)

One-half unit credit.

Course II.—First year, second term.

1. Continuation of textile study.
2. Use and alteration of commercial patterns.
3. Making a smock and plain wash skirt.
4. Fancy stitches applied to collar and cuffs, table runner, sofa pillow, or pillow slips.
5. Daintiness and simplicity emphasized in the making of underwear. Problem: Teddy bear.
6. Lessons covering hygiene of clothing, removal of spots, care and repair of clothing, selection of wardrobe suitable for a high-school girl.

One-half unit credit.

Course III.—Second year, first term.

1. Care and use of sewing machine reviewed.
2. Making of cooking cap and apron (free-hand drafting).
3. Study of textiles: manufacture, simple tests, problems in suitability of fabric to purpose, color to individual, etc., economic buying, care of clothing.
4. Use and alteration of commercial patterns.
5. Making of worsted dress.

One-half unit credit.

Course IV.—Second year, second term.

1. Use of attachments of machine.
2. Finishes and trimmings for wash dress.
3. Making of wash dress, pattern drafting, practice in fitting.
4. Hat making and trimming, renovation of millinery materials.
5. Lessons in costume design, selection and care of clothing and household textiles, hygiene of clothing, personal hygiene.

One-half unit credit.

Domestic Science.

Course 1. Third year, first term.

Study of laboratory equipment. Care of range, refrigerator, sinks, utensils, study of fuels. Classification of foods, source, composition, effect of heat, digestibility. Preparation of beverages, fruits, starchy foods, vegetables, making of sauces; sugar cookery. Making of milk, egg and cheese dishes. One-half unit credit.

Course 2. Third year, second term.

Continuation of course 1. Study of cuts of meat. Preparation of meat, fish, and gelatine dishes. Study of meat substitutes. Study of flour and various leavening agents. Doughs and batters. Preparation of popovers, griddle cakes, waffles, muffins, cookies, cakes, pastry and bread, salads and frozen desserts. One-half unit credit.

Course 3. Fourth year, first term.

Personal sanitation; household sanitation: location of house, ventilation, plumbing, disposal of waste. Household management: Care of the house, marketing, division of income, keeping accounts. Care and feeding of infants and young children. One-half unit credit.

Course 4. Fourth year, second term.

Invalid cookery. Study of relation of diet to disease. Preparation of trays for invalids. Elementary dietetics. Study of food values. Serving of meals. Preserving and canning fruits. One-half unit credit.

Education.

ELEMENTARY PSYCHOLOGY I.

This course is primarily for high-school students intending to teach. The student is introduced to the subject from a functional standpoint, emphasis being laid on what the mind does rather than what it is. One-half unit credit.

MANAGEMENT AND METHODS II.

This course is intended for students completing the secondary course, who plan to teach before entering college. It anticipates the problems of method and management the beginning teacher meets in the rural and village school. One-half unit credit.

Observation of Teaching.—The Training School will be open to prospective teachers for purposes of observation. If conditions permit, ½ unit credit may be secured.

English.

Course 1.—READING AND ORAL COMPOSITION.

Correlated with the short story. One-half unit credit.

Course 2.—ENGLISH GRAMMAR AND COMPOSITION.

A study of sentence constructions. Analysis, synthesis. One-half unit credit.

Course 3.—COMPOSITION AND RHETORIC.

Description, narration, themes. One-half unit credit.

Course 4.—COMPOSITION AND RHETORIC.

Exposition, argumentation, poetic forms. One-half unit credit.

Course 5.—AMERICAN LITERATURE.

A study of different schools of writers and the representative authors of each, with representative classics. One-half unit credit.

Course 6.—MYTHOLOGY.

Correlated with a study of Milton's minor poems, and other illustrative classics. One-half unit credit.

Course 7.—A Study of English Prose Classics.

Addison, Lamb, Macaulay, Ruskin, Stevenson, Kipling; correlated with some phase of composition work—Paragraphing, punctuation, etc. One-half unit credit.

Geography.

Courses 1 and 2.—Physical Geography.

This course is designed to open the doors of science to the secondary pupil. To introduce topography, climate and soil as economic controls. To bring the student into harmony with his geographic environment. One unit credit.

Course 3.—Geography Review.

This course is designed for high school and college students who desire a general review of subject matter of political geography, together with methods of presentation. One-half unit credit.

Course 4.—Commercial Geography.

This course is designed to give the high-school student a knowledge of the geographic basis of commerce. It consists of text work, library reading, and the working out of geographic commercial problems. One-half unit credit.

History and Social Sciences.

JUNIOR HIGH SCHOOL.

Course I.—Ancient History.

This covers an introductory study of the ancient nations of Egypt, Babylonia, Chaldea, Assyria, Phœnicia, the Hebrews, India, and China. The major part of the course is given to Greece and her institutions. Offered five hours per week, the first semester of the second year, Normal High School course, and is essential to History of Education. One-half unit credit.

Course II.—Ancient History.

This course is given to the study of Rome through her rise and fall, and also the transitional period from 476 A. D. to the death of Charlemagne, 814. Offered five hours per week, second semester, second year, Normal High School course. This is essential to History of Education. The work in courses 1 and 2 is done from outline. Special reference for library work, with map drawing, special papers and special illustrated lectures by the teacher. Daily. One-half unit credit.

SENIOR HIGH SCHOOL.

Course III.—Medieval History.

This course covers the period from the death of Chalemagne to the close of the fifteenth century. In this course special attention is given to the rise of nations after the fall of Rome and the struggle for supremacy between the church and state. Offered first semester, third year, Normal High School course. Daily. One-half unit credit.

Course IV.—Modern History.

This course takes up the Renaissance, Reformation, Revolutions, social life of the times, rise and growth of constitutional governments with the fall of absolutism. Offered the second semester of the third year, Normal High School course. Daily. One-half unit credit.

Course V.—AMERICAN HISTORY.

This course covers the whole range of American history from 1492 to date. The aim is to give special attention to a mastery of the facts, and chronology with reference to the relation of these facts to the growth and development of our institutions. This course runs through the year. The last six weeks will be given to Kansas history. One unit credit.

Course VI.—CIVICS.

This course is to give the student a thorough understanding of the principles and practical workings of our government and prepare for intelligent citizenship. One-half unit credit.

Course VII.—ELEMENTARY ECONOMICS.

In this course attention is given to the fundamental principles of economics, with special work assigned to students suited to that course, such as rural economics, home economics, and social problems of city and farm. In our age of political, social and economic problems this course is indispensable and lays well the foundation for further study in economics and society. Offered the second semester, fourth year. One-half unit credit.

Course VIII.—ENGLISH HISTORY.

A short course based upon Cheyney's text, to aid pupils in understanding the basis of many of our modern institutions which are otherwise not clear in the student's thinking. One unit credit.

Foreign Languages.

JUNIOR HIGH SCHOOL.

LATIN.

ELEMENTARY (A). Second year.

First semester. Smith's Latin Lessons, 1 to 20, supplemented by many additional exercises. English derivation; comparison of English and Latin grammar. The simplest forms and uses of cases, persons, numbers, tenses.

Second semester. Smith's Latin Lesson, 21 to 40, with additional exercises. Derivation and comparison of grammar through the complete noun declension, the active and passive indicative of verbs. Latin in daily life.

ELEMENTARY (B). Third year.

First semester. Smith 41 to 60, with easy reading. Latin in newspapers and magazines, science, invention, and advertisements.

Second semester. Smith completed. Latin plays. Latin in English literature. Derivative notebooks and scrap books throughout.

GERMAN.

CONVERSATIONAL. Second year.

First semester. Primer, conversation, and written exercises. At the end of the semester Gronow's Jungdeutschland will be used.

Second semester. Jungdeutschland completed. Songs, riddles, poems memorized.

ELEMENTARY. Third year.

First semester (I). Spanhoofd's Elementarbuch der Deutschen Sprache, lessons 1 to 12. Vorwaerts, pages 1 to 25.

Second semester (II). Spanhoofd and Vorwaerts completed. Stories by such authors as Stoekl, Bluethgen, Rosegger.

LATIN.

Course I.—ELEMENTARY.

Smith: Latin Lessons, lessons 1 to 35, inclusive. Special attention to forms; daily Latin and English exercises; vocabulary drill; observation of English derivatives. One-half unit credit.

Course II.—ELEMENTARY (continued).

Smith completed. Daily drill on forms, vocabulary, idioms, derivations. Influence of Latin on English grammar and spelling. One-half unit credit.

Course III.—CÆSAR.

Cæsar: De Bello Gallico, books 2, 3, 4. Review of first year's work. Grammar references (Bennett) carefully studied. Special attention to phrasing, idioms, and fluency of translation. Roman warfare and the Great War. One-half unit credit.

Course IV.—CÆSAR (continued).

De Bello Gallico, book 1 and selections from 5, 6, 7. Baker and Inglis: Latin Prose Composition, part I; Ancient Germany and Britain. One-half unit credit.

Course V.

Cicero's first, second and third orations against Catiline. Baker and Inglis' Composition, part II, begun. One-half unit credit.

Course VI.

Cicero's fourth oration against Catiline. The Manilian Law. Study of Archias and Roman Republic. Baker and Inglis' Composition, part II, completed. One-half unit credit.

Course VII.

Vergil's Æneid, books 1, 2 and 3, with emphasis on scansion, poetic style, and mythology. One-half unit credit.

Course VIII.

Vergil's Æneid, books 4, 5 and 6. Mythology; 75 to 100 lines committed to memory. One-half unit credit.

GERMAN.

Course I.—ELEMENTARY.

Spanhoofd: Elementarbuch der Deutschen Sprache, lessons 1 to 12. Bacon: Vorwaerts, pages 1 to 25. The aim of this course is a knowledge of the grammatical principles of the German language, an understanding of simple German composition, power of speaking and writing in simple sentences, and the ability to read easy German verse and prose. The German language is from beginning, as far as possible, the medium of instruction. One-half unit credit.

Course II.—ELEMENTARY (continued).

Elementarbuch and Vorwaerts completed. Stories by such authors as Bluethgen, Stockl, Rosegger. Daily written and conversational exercises. One-half unit credit.

Course III.—MODERN GERMAN PROSE.

Reading of works of such authors as Wildenbruch, Storm, and others. Review of German grammar with special attention to syntax. Composition based on the text. One-half unit credit.

Course IV.—MODERN PROSE.

Works of Heyse, Baumbach, Sudermann, and others will be read. Free reproduction of short anecdotes. One-half unit credit.

Manual and Industrial Arts.

WOODWORK.

Course I.—BENCH WORK.

Includes a study of tools—as uses, names of parts, adjustments, their care, and how to sharpen; the making of a few important joints used in wood construction and their application in making useful projects; a study of materials, fastenings, etc.; notebook work, covering the talks, demonstrations, problems sketches. Five double periods per week for twenty weeks. One-half unit credit.

Course III.—JOINERY.

This course includes a study of tools, as uses, names of parts, adjustments, care of, and how to sharpen; the making of important joints and their application in the making of useful projects; a study of the different woods and materials used; demonstrations, and notebook work. Five double periods per week for twenty weeks. One-half unit credit.

Course V.—WOOD TURNING.

Includes the care and use of turning tools, care and adjustments of lathe, turning between centers, chuck, faceplate and screw-center work, polishing in the lathe. Exercise work followed by applications in some useful project. Five double periods per week for twenty weeks. One-half unit credit.

Course VII.—PATTERN MAKING AND MOLDING.

Includes instruction in the use and care of tools and machinery; instruction in allowances for draft, shrinkage, finish, shake and warp; a study of all the interests involved in the foundry of each pattern; and the making of patterns involving the fundamental principles of the trade. Five double periods per week for twenty weeks. One-half unit credit.

Course IX.—CABINETMAKING.

Includes the use of general woodworking tools and machines; designing and construction of furniture and cases for home and school use; a study of woods; and a carefully prepared notebook on the work done, covering fastening devices, materials, demonstrations, etc. Five double periods per week for twenty weeks. One-half unit credit.

Course XI.—BUILDING CONSTRUCTION.

Designed to teach the fundamentals of building construction applied to the making of useful projects about the home. The work is largely individual, and encouragement is given to secure the greatest possible variety of projects. Five double periods per week for twenty weeks. One-half unit credit.

METAL WORK.

Course 2.—FOUNDRY.

A course in which the simpler problems of foundry practice are studied, including green dry sand and cored work, the use of the brass furnace and cupola. Five double periods for twenty weeks. One-half unit credit.

Course 4.—FORGING.

A course in which the theoretical as well as the practical side of forging is studied in connection with the simpler farm and industrial problems. Five double periods for twenty weeks. One-half unit credit.

Course 6.—MACHINE-SHOP PRACTICE.

Elementary work in chipping, filing, fitting and practical experience in operating the more common machine tools. Five double periods for twenty weeks. One-half unit credit.

Course 7.—MACHINE SHOP.

A continuation of course 6.

Mathematics.

Course I.—GENERAL MATHEMATICS.

A general course in mathematics, consisting of arithmetic and the simpler processes of algebra and geometry. The practical applications of arithmetic are emphasized. The aim of the entire year's work is to leave the student with such algebraical processes and geometrical concepts as will fit them for the common vocations. First semester, second year of Junior High School.

Course II.—GENERAL MATHEMATICS.

A continuation of course I. Second semester, second year of Junior High School.

Course III.—MATHEMATICS I.

An introductory course in the simpler principles of algebra and plane geometry. Practical problems are used which are possible only after both algebraic methods and geometrical concepts are obtained. First semester, third year of Junior High School. One-half unit credit.

Course IV.—MATHEMATICS II.

A continuation of course I, including, in addition to algebra and geometry, an introduction to trigonometry in the use of the tangent of an angle. Second semester, third year of Junior High School. One-half unit credit.

Course V.—MATHEMATICS III.

In the second year of unified mathematics the geometry, which was first principally introduced by constructions, becomes more formal in its methods, and the algebra is further developed to include all the essentials of the common year course. The fundamental conceptions of solid geometry are treated in the second year's work, and the trigonometry is enlarged to include the sine, cosine, and tangent of angles of a right triangle. First semester, first year of Senior High School. One-half unit credit.

Course VI.—MATHEMATICS IV.

A completion of the topics outlined in course 3. Second semester, first year of Senior High School. One-half unit credit.

Course VII.—ARITHMETIC.

A rapid review of the essential topics of practical value, with emphasis on the short methods in common use. Considerable stress is placed upon the degree of accuracy required in the problems assigned, and only such problems are considered as have close similarity with those met in the commercial or industrial occupations. This course is designed for the special benefit of the rural and grade teachers. First semester, second year. Prerequisite, two years of high-school mathematics. One-half unit credit.

Course VIII.—ALGEBRA III.

This course completes the work in algebra usually given in high schools. It includes a review of linear and quadratic equations; radicals; involution; evolution; progressions; logarithms and imaginaries. Second semester. Prerequisites, courses 1 to 4, or their equivalent. One-half unit credit.

Course IX.—INDUSTRIAL MATHEMATICS I.

A course in elementary mechanics as applied to agricultural and shop machinery. Carpentry and building; sheet-metal work; bolts, screws and rivets; shafts, pulleys and gears; plumbing and hydraulics; steam engines; mathematics for machinists. First semester. Prerequisite, courses I and II, or their equivalent. One-half unit credit.

Course X.—INDUSTRIAL MATHEMATICS.

A continuation of course VII. Second semester. Prerequisite, course VII. One-half unit credit.

Course XI.—GEOMETRY I.

Plane geometry, including the general properties of plane rectilinear figures; the circle and the measurement of angles, regular polygons; solution of numerous original exercises and practical problems. This course is given for those who have had one year's work wholly in algebra, and is not to be taken by students who have had one year of unified mathematics. First semester. One-half unit credit.

Course XII.—GEOMETRY II.

Essentials of plane geometry completed; elements of solid geometry; properties and measurements of solids; numerous original and practical exercises. Second semester. Prerequisite, course IX. One-half unit credit.

Physical Sciences.

INDUSTRIAL PHYSICS.

Course 1.—MECHANICS AND HEAT.

An elementary course, consisting of classroom demontrations, recitations, laboratory work and field trips to develop and apply the principles of mechanics and heat. Emphasis is placed largely upon the industrial applications of these principles to familiar machines and instruments, such as steam and gas engines, pumps, hydraulic presses, pressure gauges, water and gas meters, speed indicators, pulleys, blocks and tackles, and chain hoists. First semester. Three class periods and two double laboratory periods per week. One-half unit credit.

Course 2.—ELECTRICITY, MAGNETISM, SOUND AND LIGHT.

An elementary course of demonstrations, recitations and laboratory work in practical electricity, sound and light. The boys study the construction and operation of such electrical devices and machines as dynamos, motors, transformers, arc lights, meters, electric irons, toasters, stereopticon machines, telephones, telegraph, wireless systems. Second semester. Three class periods and two double laboratory periods per week. One-half unit credit.

HOUSEHOLD PHYSICS.

Course 1.—HEAT AND LIGHT.

An elementary course in the principles of heat and light, consisting of classroom demonstratons, recitations and laboratory work. The aim in this course is to develop those principles of physics which are met with in the various household appliances found in the ordinary home. Such problems are considered as the heating, lighting and ventilating of a modern home; the various systems in use are investigated and the underlying principles developed and discussed. The efficiency of various cooking utensils, as aluminum, copper, granite and iron, is determined. The efficiency of gas stoves and lights is measured; the principles of gas and water meters are studied; the candlepower of oil, gas and electric lights is measured and compared. First semester. Three class periods and two double laboratory periods per week. One-half unit credit.

Course 2.—SOUND, ELECTRICITY, AND MECHANICS.

A continuation of course 1, with emphasis on such subjects as music and musical instruments, electric doorbells, flatirons, toasters, water-supply systems, cream separators, washing machines, household plumbing. Second semester. Three class periods and two double laboratory periods per week. One-half unit credit.

TEACHERS' REVIEW COURSE.

A ten-weeks course in the fundamental principles of physics, given from the lecture demonstration standpoint. This course is designed as a review of high-school physics for teachers who wish to prepare more thoroughly for teachers' examinations than is possible in county institutes. Second semester, last ten weeks. Five class perods per week. One-fourth unit credit.

INDUSTRIAL CHEMISTRY.

Course 1.

This course consists of the study of such subjects as air, water, fuels, and cleaning agents, together with the easier tests for the classes of plant and animal foods. Emphasis is placed upon a clear understanding of the chemistry of the home and farm, as this course is designed for students of the domestic art, science and agriculture courses. One-half unit credit.

Course 2.—INDUSTRIAL CHEMISTRY.

A continuation of course 1. One-half unit credit.

REGISTER OF STUDENTS.

GRADUATE STUDENTS DOING SPECIAL WORK.

Allen, Anna; Fort Scott.
Beal, Zoe M.; Pittsburg.
Brandenburg, Lola Ethel; Pittsburg.
Bray, Olive; Kingman.
Burdette, Anna Lois; Winfield.
Burger, Esther Luetta; Pittsburg.
Davis, Leita Margarita; Independence.
De Yoe, Patricia Maurie; Pittsburg.
Ebenstein, Evelyn Faye; Columbus.
Fisher, Sherla Lee; Pittsburg.
Graham, Myrtle Burton; Pittsburg.
Hubbell, Edith Viola; Pittsburg.
Hubbell, Elmer; Pittsburg.
Ingleman, Anna Alberthine; Independence.
Jennings, Leonora; Winfield.
Kern, Mary Elizabeth; Pittsburg.
Macklin, Sarah Luella; Pittsburg.
Marchbanks, Ethel; Pittsburg.
Marriott, Annie Alice; McCune.
Nickell, Maude Blanche; *Joplin, Mo.*
Piatt, James Allen; Parsons.
Pomeroy, Dwight Abel; Pittsburg.
Pritchett, Gordon S.; Pittsburg.
Rankin, Christopher Van Rensselaer; Mount Hope.
Rankin, Osa Fisher; Mount Hope.
Thowe, August Fred; Americus.
Weaver, Floyd J.; Pittsburg.
Wheeler, J. L.; Pittsburg.
Wheeler, Mrs. Mabel Rammey; Pittsburg.
Williams, S. Joe; *Joplin, Mo.*

COLLEGE SENIORS.

Alberty, Iva Adele; Pittsburg.
Allen, Earl Brandt; Weir.
Baker, Muriel; Belpre.
Barker, John D.; Girard.
Beckett, Percy Robert; Garden City.
Bennett, Ernest; Pittsburg.
Bogue, Mattie Edna; *Sherman, Tex.*
Broadlick, Robert Charlton; Pittsburg.
Caffey, Ruby M.; Pittsburg.
Campbell, Floy Martha; Parsons.
Cellars, Samuel Roscoe; Chetopa.
Chatham, Mary Marguerite; Parsons.
Childs, Ann Katherine; Kansas City.
Clark, Agnes Bea; Humboldt.
Collins, Lloyd M.; Iola.
Covell, Effie M.; Pittsburg.
Cragg, Rexford B.; Pittsburg.
Currie, Elizabeth; Erie.
Davidson, Ross Wallace; West Mineral.
Davis, Fern Cleo; Pittsburg.
Davis, Harold P.; Pittsburg.
Davis, Freda A.; Pittsburg.
Degan, Frances Judith; Pittsburg.
DeLapp, Ethelene; Cherokee.
Dillenback, Mary Emily; *Chickasha, Okla.*
Dixon, Fremont; Moline.
Dudley, Edward C.; Pittsburg.
Easter, Bruce C.; Oswego.
Eddy, Henry N.; Girard.
Farner, Effie Oletha; Pittsburg.
Fedell, Chas.; Chicopee.
Finley, Laura Joquette; Pittsburg.
Fisher, Grace Mildred; Ottawa.
Fisher, Mary Ruth; Topeka.
Flater, Mattie Alice; Hepler.
Gable, Esther; Pittsburg.
Garnand, Sidney; Wellington.
Gardner, Eva May; Pittsburg.
Gastineau, Chas. L.; Pittsburg.
Gaw, Emily Elmeir; Girard.
Gilmore, Jesse Monroe; Fort Scott.
Coffe, Raye Eleanor; Pittsburg.
Coffe, Vera Elizabeth; Pittsburg.
Coffe, Vina Hildebrand; Pittsburg.
Goodwin, Grace May; Abilene.
Green, Ethel; Redfield.
Green, Robert Roy; Redfield.
Griffin, Roscoe Charles; Labette.
Hance, A. Ivena; Bartlett.
Harris, Louvina Dockery; Galena.
Hart, Robert Wm.; Frontenac.
Holt, Zella Fay; Emporia.
Hubbard, Flora; Galena.
Hutchinson, Florence Julia; Canton.
Hylton, Jennie; Erie.
Ildza, Andrew R.; Pittsburg.
Karr; Sallie Geier; Girard.
Kinsella, Margaret; Pittsburg.
Knox, James A.; *Muskogee, Okla.*
Kohman, Lillie Lydia; Dillon.
Koopman, Minnie Clara; Pittsburg.
Lance, Beryl Lynne; Pittsburg.
Lewis, Esther Dell; Pittsburg.
Lortz, Geo. Matthew; Parsons.
Lyter, Cecile Amy; Carbondale.
McCormick, Leur R.; Lecompton.
McGinnis, Fred; McCune.
Martin, Grace Edna; Ottawa.
Miller, C. M.; Altamont.
Mortimer, May; Cherryvale.
Mullin, Maurice E.; Walnut.
Nielsen, George Henry; Weir.
Otwell, Geraldine; Independence.
Palmer, Alice Helen; *Muskogee, Okla.*
Parr, Augustus Stanley; Rossville.
Patterson, Belle Bernice; Pittsburg.
Patterson, Glen Elmo; Wellington.
Patterson, Noble Wayne; Wellington.
Payne, Blanche; Pittsburg.
Pierce, Lessey Nathan; Redfield.
Powell, Murat Halstead; Pittsburg.
Rencenberger, Ruth A.; Pittsburg.
Robertson, Dora; Columbus.
Roper, Ruby Fay; Pittsburg.
Roseberry, E. E.; Pittsburg.
Rule, H. C.; Arcadia.
Rynerson, Harriet Elden; *Carthage, Mo.*
Shumaker, F. A.; Farlington.
Slattery, M. W.; Girard.
Smith, Elsie Mirian; Coffeyville.
Smith, Nena Eunice; Girard.
Snyder, Chas. A.; Pittsburg.
Statler, Retta; *Tupelo, Okla.*
Stevens, Evan Watson; Pittsburg.
Stewart, Mary; Pittsburg.
Tanner, Vic A.; Erie.
Tharrington, Robert C.; Pittsburg.
Tucker, Edythe Helen; *Cameron, Okla.*
Tudor, Mary Margaret; Pittsburg.
Walker, Ruth Esther; Cunningham.
Wheeler, Mary Blanche; Pittsburg.
Widner, S. Roy; Pittsburg.
Yates, Anna; Pittsburg.

COLLEGE JUNIORS.

Atwood, Vivian A.; Coffeyville.
Babb, Joe R.; Girard.
Baird, Mary Anna; Opolis.
Barker, Earle E.; Parsons.
Barnhardt, Ethel Ellen; Neosho.
Baxter, Myrtle; Pittsburg.
Beeler, Lewis Frederic; Savonburg.
Bement, May Elizabeth; Winfield.
Benefiel, James H.; Coffeyville.
Benn, Fannie Agnes; Pittsburg.
Boman, Fern Francis; Weir.
Boman, Myrtle May; Weir.
Bousfield, Ethel Leora; Lansing.
Brentlinger, Nelle Merle; Columbus.
Brewer, Arleigh Raymond; McCune.
Briggs, Philip Irville; Coffeyville.
Brown, Nina Elizabeth; Pittsburg.
Burton, Frank Madden; Mound City.
Buvinger, Blanche Ailene; Chetopa.
Carey, Ellen Elizabeth; Pittsburg.
Carey, Henry R.; Pittsburg.
Cass, Mrs. Edith L.; Pittsburg.
Cass, Geo. T.; Pittsburg.
Clark, Chester Merritt; Pittsburg.
Columbia, Juanita; Chetopa.
Cook, Carrie Rosella; Parker.
Cook, Chas. De Vere; Pittsburg.
Cooper, Cleo Mabel; Westphalia.
Cooper, Thomas Earl; Parsons.
Cooper, Willa Abe; Topeka.
Daly, Katherine Evelyn; Independence.
Dewhirst, Winifred; Farlington.
Diller, Eunice Lucile; Pittsburg.
Donahey, Helen Shirley; Pittsburg.
Dorsey, Helena; Pittsburg.
Doughman, Mellie; Mound Valley.
Dyer, Golden Lee; Pittsburg.
Elliott, Edna Pearl; Pittsburg.
Ennis, Margaret; Pittsburg.
Fahey, Bessye Irene; Girard.
Fair, Faye Rachael; Independence.
Farmer, Essie Pearl; Pittsburg.
Ferguson, Nita; Independence.
Ferpotto, John; Frontenac.
Fisani, John G.; Frontenac.
Fisson, Ruth Lucile; Chanute.
[illegible], Edward Albert; Chanute.
Forsythe, Arvilla Elizabeth; Pittsburg.
Frampton, Lela May; Pittsburg.
Fulkerson, Freddie Lidia; Pittsburg.
Gaither, Jennie Louise; Pittsburg.
Galphin, Grace; *Asbury, Mo.*
Garvin, Marian; Pittsburg.
Gibson, E. Louise; Pittsburg.
Gilbert, Cleta Naomi; Burr Oak.
Golden, Wesley De Witt; Fort Scott.
Greef, Dorothy Etta; Pittsburg.
Guthridge, Lemuel A.; Independence.
Hall, Mrs. Hazel Marie; Pittsburg.
Hall, Victor Louis; Osage City.
Hallock, Naomi Ruth; Oswego.
Hallock, Beulah Mau; Oswego.
[illegible], Margaret; Iola.
Hiatt, Bessie Dalaneice; Arma.
Highland, Esther May; McCune.
Hill, Fannie Lulu; Cherokee.
Hill, Mary Belle; Hutchinson.
Hildebrand, Elizabeth; Pittsburg.
Holman, Carl Leland; Oxford.
Hopkins, Louise E.; Nevada.
Householder, Stanford Linden; Pittsburg.
Householder, Hattie Campbell; Pittsburg.
Huff, Mary Pearl; Galena.
Hughes, Clara; Topeka.
Hunt, Maud; Pleasanton.
Ivy, Gay Maud; Coffeyville.
Joy, Hazel Lenta; Coffeyville.
Johnson, Clarence Edward; Eureka.
Jones, Willie Belle.
Jones, Zell Marjean; Yates Center.
Kaemerling, Anna Elizabeth; Chanute.
Kennedy, Nona Nell; Coffeyville.
Kirk, Grace Edith; Columbus.
Lance, Bertha Lois; Pittsburg.
Lance, John F.; Pittsburg.
Laney, Lena Eloise; Pittsburg.
Leonard, Katherine; Eudora.
Lesslie, Jessie Catherine; Independence.
Leyburn, Ruby Louise; Weir.
Linton, Lucile; Joplin.
Lyerla, Walter S.; Chanute.
McColey, Fred M.; Oswego.
McCoy, Mabel Louvina; Pittsburg.
McCue, Ernest Francis; Mound Valley.
McCully, Maud; Coffeyville.
McFarland, Edith Elizabeth; Pittsburg.
McGinnis, Harry; McCune.
McGonigle, Mattie; Pittsburg.
McKee, Thomas Bryan; Girard.
McWilliams, Besse C.; Fort Scott.
MacLean, Florence; Pittsburg.
Maletz, Katherine Anna; Pittsburg.
Marsh, Flora Luella; Pittsburg.
Meyer, Amelia Pauline; Girard.
Miller, Bryan R.; Halstead.
Minges, Henry V.; Murdock.
Moherman, Helen; Wellsville.
Moore, Jewell Ed.; Independence.
Morgan, Chas. H.; Girard.
Morrison, Ira G.; *Aledo, Ill.*
Mullikin, Mary Evaline; Kinsley.
Nellis, Wm. Minter; Cambridge.
Nickell, Wm. Anderson; Joplin.
O'Brien, Margaret; Parsons.
O'Rourke, Nora; St. Paul.
Oliver, Anna; Pittsburg.
Palmer, Frances Elizabeth; Pittsburg.
Quackenbush, Chas. Henry; Pittsburg.
Rambo, Wm. Lester; Mulberry.
Reese, Ivor E.; Pittsburg.
Reeves, Homer L.; Grenola.
Reeves, Vera; Pittsburg.
Reppert, Lester Adelbert; Independence.
Rhoades, Roy Glen; Rose Hill.
Riley, Gladys Louise; Pittsburg.
Robertson, Myrl Ethel; Weir.
Robieson, Julia Agnes; Winfield.
Rodenburg, Lydia Minnie; Halstead.
Romberger, Nellie Marie; Chanute.
Romig, Ida Viola; Coffeyville.
Satterlee, Rowena; Pittsburg.
Schauer, William; Radley.
Schwab, Bessie Alice; Cherokee.
Selders, Paul Ving; Pittsburg.
Sheppard, Mary Jane; Fort Scott.
Shirk, Noah H.; Columbus.
Shumard, Velma Dean; Colony.
Sloan, Don A.; Halstead.
Smiley, Fannie May; Pittsburg.
Smith, Genora Blanche; Pottsburg.
Smith, George Mead; Coffeyville.
Smith, Glenn D.; Frontenac.
Smith, Helen Jane; Pittsburg.
Snyder, Salathael Schuyler; Pittsburg.
Spence, Charles Calvin; Hiattville.
Stanfield, Lucian Robert; Chanute.
Stevens, Maude; Garnett.
Stroup, Edith Wilda; Pittsburg.
Summers, Belle Lorene; Pittsburg.
Swain, Tola Lucille; Rock.
Taber, Zoe Buena; Pittsburg.
Taylor, Flossie M.; Pittsburg.
Towner, Raymond Waldo; Ness City.
Trinder, Martha Anne; Parsons.
Tutcher, Louise; Kansas City.
Utterback, Madge Winifred; Caney.
Vaughan, Ima Jean; Wolf City.
Vietti, Frank; Pittsburg.
Waddle, Mabel Viola; Osage City.

COLLEGE JUNIORS—*continued.*

Warner, Addie E.; Pittsburg.
Wampler, Bertha Maye; Walnut.
Warner, Minerva Belle; Cherryvale.
Watson, George E.; Fort Scott.
Weare, Edna Blanche; *Southwest City, Mo.*
Webber, Damon A.; Fort Scott.
Wells, James Ralph; Cedarvale.
Wells, Viola Virginia; Colony.
Willard, Mabel Grace; Arcadia.
Williams, Ray Ernest; Chanute.
Wilson, Mrs. J. A.; Pittsburg.
Winner, Clyde Curtis; Winfield.
Woodburn, Winona Adeliah; Holton.
Woods, O. Paul; Parsons.
Worden, Arthur Milton; Wellington.
Wyman, Claude Perry; Pittsburg.
Wyatt, Edwin Mather; *Houston, Tex.*
Young, Grace Ellen; Galena.
Ziegler, Tobias F.; Pleasanton.

COLLEGE SOPHOMORES.

Aikman, Leonard Barney; Pittsburg.
Alexander, Gladys Nellie; Pittsburg.
Allen, Bessie Opal; Chanute.
Allen, Lora Alice; Baxter Springs.
Allison, Avis Maude; Pittsburg.
Alumbaugh, Eva; Pittsburg.
Anderson, Minnie K.; Weir.
Angell, Ethel Eleanor; Savonburg.
Ash, Joel M.; Pittsburg.
Ash, Ursula Marie; Pittsburg.
Ashby, John Walter; Coffeyville.
Babcock, Vernon Everett; Walnut.
Bailey, Amos Arlo; Bellville.
Bailey, Jessie Marie; Pittsburg.
Baker, Annis M.; Pittsburg.
Baker, Bessie M.; Oswego.
Baker, Gladys; Oswego.
Baldwin, Romola Clark; Pittsburg.
Barber, Gertrude Louise; Coffeyville.
Behm, Paul; Pittsburg.
Bell, Angie L.; Caney.
Bell, Hazel; Council Grove.
Bement, Emma Belle; Winfield.
Bernadette, Sister Mary; Paola.
Bicknell, Fern; Pittsburg.
Bloxom, Martha A.; Independence.
Bohannon, Alvan Amos; Hope.
Bold, Blanche; Frontenac.
Borden, Hattie Adelia; Girard.
Born, Marshall Earl; Cherryvale.
Bowlus, Harry John; Mulberry.
Bradford, Helen Emily; Topeka.
Brady, Marei Edythe; Mineral.
Brandenburg, Amy Altana; Pittsburg.
Brazier, Blanche; Pittsburg.
Bresee, Nadine; Pittsburg.
Brewer, Hatye Reve; Pittsburg.
Brizendine, Serinda; Pittsburg.
Broadlick, Anna Margaret; Pittsburg.
Brown, Orpha Brannon; Galena.
Bruno, Mary Helen; West Mineral.
Bruno, May Fannie; West Mineral.
Buller, Jacob Sanders; Canton.
Burdick, Clyde Raymond; Duquoin.
Burns, Della Maude; Girard.
Burns, Howard Holland; Caney.
Burns, Minnie; Independence.
Butler, Owen; Weir.
Cadwell, Kitty Jane; Caney.
Callahan, Maurice A.; Girard.
Camp, Mollie; Bronson.
Campbell, Hope Estelle; Parsons.
Carl, Mabel Elzena; Arma.
Carlson, Mabel Christine; Osage City.
Carper, Byron; Columbus.
Carr, Ralph Howard; *Kremlin, Okla.*
Carroll, Jane Morrow; La Cygne.
Cass, Mrs. Edith L.; *Chouteau, Okla.*
Cave, Frances M.; Neodesha.
Chaplin, L. A.; Arkansas City.
Cline, Frank J.; Mullinsville.
Cline, Mrs. F. J.; Mullinsville.
Clugston, Chester R.; McCune.
Cockerill, Carl Leonard; Pittsburg.
Corning, Dorothy E.; Girard.
Cote, May; Weir.
Coverdale, Maude Maurine; Coffeyville.
Cox, Frederica; Coffeyville.
Crawley, Ruby Murtle; Weir.
Crelly, Eve-angela Phyllis; Pittsburg.
Crimm, Bernice; Council Grove.
Croft, John Martin; Columbus.
Crook, Rozella Elizabeth; Independence.
Crowell, Mrs. J. C.; Pittsburg.
Davies, Earl Edward; Pittsburg.
Davis, Naomi Bell; Frontenac.
Davis, Rachel Lizabeth; Pittsburg.
Davis, Orville D.; Asbury.
De Armond, James R.; Wilson.
Decker, Ruth A.; Iola.
De Lury, Kathryn Mae; Chetopa.
Dennis, John Donald; Olathe.
Derby, Marguerite Mary; Frontenac.
Dewey, Edna Beryl; Fort Scott.
Dice, Mary Mable; Erie.
Dodson, Clara May; Pittsburg.
Downing, Ethel; Galena.
Drake, Greta; Pittsburg.
Dresse, Edna Jean; Halstead.
Driver, Lela Edna; La Russell.
Druart, Andrea Dorothea; Frontenac.
Duffy, Emma Dene; *Joplin, Mo.*
Dyer, Claire; Pittsburg.
Edwards, Nellie Jane; Walnut.
Eldridge, Helen C.; Coffeyville.
Esch, Marie Anna; Pittsburg.
Falkenburg, Geneva R.; Coffeyville.
Feldman, Bertha Anne; Pittsburg.
Finical, Nell; Girard.
Fintel, Anna Cecelia; Pittsburg.
Ford, Mary E.; Mulberry.
Forsythe, Joseph B.; Pittsburg.
Foster, Bess L.; *Joplin, Mo.*
Fox, Arthur Berl; Parsons.
Frazier, Hope; *Guthrie, Okla.*
Frazier, Mary Scott; *Belton, Mo.*
Fry, Bessie E.; *Asbury, Mo.*
Fry, Bertha; *Corsicana, Tex.*
Gaiser, Harry M.; Wichita.
Gallagher, Clair; Chanute.
Garrison, John; Pittsburg.
Gaw, Helen; Girard.
Gerhard, Henry; Girard.
Gear, Ben H.; Wellsford.
Germaine, Sister Mary; Pittsburg.
Gilbert, Elsworth Gland; Pittsburg.
Gilbreath, Eleanor Faye; *Carterville, Mo.*
Gilbreath, Margaret L.; *Carterville, Mo.*
Gillenwater. Archie; Weir.
Gill, Ethan M.; Lyndon.
Gill, Glenn; Lyndon.
Goodwin, Edward Harold; Baxter Springs.
Graham, Alpha; *Vinita, Okla.*
Granburg, Mignon Elizabeth; Savonburg.
Gregg, Charlotte, Elainen; Frankfort.
Gregg, Ruth Marie; Pittsburg.
Grider, Bess Ann; Winfield.
Grigsby, Mildred Augusta; Galena.
Guntle, Mable Gertrude; Oswego.
Guntle, Mildred Grade; Oswego.
Hailey, Frances Don; Coffeyville.
Hale, Emmet Malcolm; *Pryor, Okla.*
Hamilton, Anne Marie; Pittsburg.

COLLEGE SOPHOMORES—*continued.*

Hanes, Martha Clarissa; Ottawa.
Harmon, Ismay Caroline; Arcadia.
Hartman, Harry V.; Cherokee.
Harvey, Bessie D.; Parsons.
Hawkins, Ernest J.; Fort Scott.
Haynes, Clara May; *Sherman, Tex.*
Hedges, Anna Florence; Elk City.
Heenan, Anna; Scammon.
Henneberry, Kathryne Virginia; Arkansas City.
Hensley, Zilpha; Rosedale.
Highbaugh, Swan L.; Coffeyville.
Hill, Catherine; Hutchinson.
Hodges, Mamie Ellen; Leavenworth.
Holman, Flo E.; Mulberry.
Holsworth, Stella Mae; Frontenac.
Holt, Vernon Boyd; West Mineral.
Hopper, Bessie; Lansing.
Hosman, Arley Lee; *Carterville, Mo.*
Hudson, Blanche I.; West Mineral.
Hudson, Earl Franklin; Wayside.
Huey, Chas. Sumner; Arkansas City.
Hull, Maud; Columbus.
Hunter, Anna Clara; *Sherman, Tex.*
Hughes, Anna Elizabeth; Cherokee.
Hunts, Maud L.; Pleasanton.
Huston, Maggie R.; Pittsburg.
Huston, Vera Lorene; Pittsburg.
Hutchinson, Mary Elizabeth; Pittsburg.
James, Eula; Arcadia.
Janes, Mabel Ruby; Farlington.
Janson, Mrs. Jessie; *Coldwater, Okla.*
Johnson, Florence M.; Independence.
Johnson, Leota; Winfield.
Johnson, Ruth; Frontenac.
Jones, Esse D.; Frontenac.
Jones, Dora; Independence.
Kautz, E. Beryl; Girard.
Keeler, Mary Pearl; Farlington.
Keeney, Flora May; Pawnee Station.
Kelly, Anna Lucinda; Cunningham.
Kennedy, Leah Maurine; Coffeyville.
Kennedy, Marguerite; Fredonia.
Kerr, Valda Mae; Pittsburg.
Kessler, Ivy Haven; Mound Valley.
Kiser, Hazel Elizabeth; Udall.
Kincaid, Willie Reid; Pittsburg.
Knotts, Mintie T.; Cherokee.
Kuykendall, Hazel Irene; Columbus.
Lacock, Edith L.; Columbus.
Laird, Dorothy Helen; Frontenac.
Lane, Doris Elizabeth; Pittsburg.
Lane, William; Coffeyville.
Lee, Percy Harold; Kansas City.
Liepman, Morres Vickers; Pittsburg.
Lillibridge, Cynthia Grace; Independence.
Litton, Glenn B.; Pittsburg.
Locke, Ova Lee; Cherryvale.
Locke, Ruth Louise; Erie.
Lowe, Lavon Mary; Pittsburg.
Lucas, Crystal Isabelle; Pittsburg.
McAdoo, Ruby Edna; Pittsburg.
McBee, Grace Emma; Pittsburg.
McBride, Pearl Blanche; Pittsburg.
McCall, La Vern Filson; Pittsburg.
McCants, Hallie May; Cherokee.
McCartney, Mamie Katherine; Columbus.
McCaskill, George Martin; Pittsburg.
McCleary, Lena Faye; Mulberry.
McClelland, Sarah Alice; Oalthe.
McClanahan, Margaret; Radley.
McDonald, Mary Louise; Scammon.
McFall, Mable Irene; Pittsburg.
McGeery, June Iona; Pittsburg.
McGonigle, Margaret; Pittsburg.
McInerny, Marguerite Agnes; Parsons.
McKee, Myrtle Anna; Girard.
McKean, Anna L.; Gas City.
McLaughlin, Lida; Monmouth.
McNeely, Helen Louise; Topeka.
McQuiston, Julia Alice; Independence.
McWilliams, Jessie Agnes; Osawatomie.
Maletz, Marie; Pittsburg.
Mark, Radie; Erie.
Mathes, Lloyd Merrill; Pittsburg.
Matter, Glenn E.; Weir.
Matter, William Everette; Weir.
Matthews, Lutie Belle; La Harpe.
Meirs, Katherine; Pittsburg.
Mertz, Sister Mary Ursula; Paola.
Metzen, Anna; Edna.
Millar, Charles James; *Webb City, Mo.*
Miller, Agnes Christina; Udall.
Miller, Donald; Halstead.
Miller, Maud; Columbus.
Miller, Wm. Beach; Edwardsville.
Milleson, Kathryn Flowers; Pittsburg.
Minnifield, Walter R.; Oswego.
Monahan, Mary Margaret; Frontenac.
Monzingo, Martha Bertha; Hutchinson.
Moody, Birdie Florence; Columbus.
Moore, Grace; Abilene.
Morgan, Katie; Columbus.
Mullin, Rosa; Pittsburg.
Mulvaney, Warren Otto; Cherryvale.
Myers, Clara G.; Weir.
Myers, Hattie Melvina; Pittsburg.
Myers, Lulu May; Pittsburg.
Nation, Marion Allen; Pittsburg.
Nation, Wm. Roy; Shaw.
Newell, Will L.; Independence.
Nichols, Mary Edna; Pittsburg.
Noren, Ruth Sidney; Pittsburg.
Oberg, Ethel Louise; Mulberry.
Oldham, Ruth Catherine; Mulberry.
Ogden, Helen Laird; Coffeyville.
Oliver, Hazel; Pittsburg.
Oliver, Sarah Elizabeth; Pittsburg.
Palmer, Bernice Minnie; Herington.
Park, Kathryn Helen; Westphalia.
Parrish Margie Maud; Pittsburg.
Patterson, Edward White; Pittsburg.
Patton, Goldie Ruth; Westphalia.
Pazzie, Sophia; Frontenac.
Pearson, Kathryn Romayne; Chanute.
Pease, Katharine M.; Pittsburg.
Peterson, Dora May; Weir.
Philips, Elinor Grace; *Minden Mines, Mo.*
Phillips, Clyde Ulysses; Columbus.
Piper, Robert Harold; Columbus.
Pryor, Retta Irene; Scammon.
Plagens, Henry J.; Pittsburg.
Porter, Ruby Lillian; Fayetteville.
Powell, Marjorie; Cherryvale.
Proctor, Jesse Spencer; *Lamont, Okla.*
Quinn, Margaret F.; Scammon.
Randolph, Gould; Pittsburg.
Rankin, Nellie Regina; Pittsburg.
Redmond, Eleanor Alice; Walnut.
Reese, Hannah M.; Pittsburg.
Reese, Julius Ceaser; Cherokee.
Reese, Mattie Lou; Pittsburg.
Reeves, Gula Marie; Pittsburg.
Reeves, Homer L.; Grenola.
Reid, Marie Jane; Arkansas City.
Rencenberger, Charles; Pittsburg.
Reynolds, Mayme; Erie.
Richards, Earl B.; Girard.
Riley, Jessye Viola; Iola.
Roach, Minnie Maye; Pittsburg.
Roach, Stella May; Cedar Vale.
Robinson, Lily E.; Columbus.
Rogers, Flora; Pittsburg.
Rose, Marion M.; Fort Scott.
Rule, Herbert E.; Monmouth.
Rushing, Mary Woodson; Hutchinson.
Sndidge, Allen Wilson; Mulberry.
Schahuer, Elizabeth; Radley.
Scott, Leeta Maxcy; Parsons.

COLLEGE SOPHOMORES—*continued.*

Selander, Fanny; Garnett.
Sergeant, Martha Gertrude; *Joplin, Mo.*
Sheffield, Olive Agnes; Arcadia.
Shinkle, Isabelle; Mound City.
Shireman, Eva; Walnut.
Sickles, Gracia; Indianapolis.
Sidwell, Ulla Buena; Pittsburg.
Skinner, Maude Beatrice; Cherokee.
Skourup, Elnora Catherine; Pittsburg.
Sloan, Delno Ralph; Halstead.
Smiley, Helena; *Manzanola, Col.*
Smilie, Gladys Edgerton; Mulberry.
Smith, Edith Mary; Nickerson.
Smith, George W.; Labette.
Smith, Irene Clotilda; Independence.
Smith, Laura Margaret; Nickerson.
Smith, Leta Elizabeth; Pittsburg.
Smith, Lowell Everett; Independence.
Smither, Edgar William; Pittsburg.
Sneller, William Arthur; Rossville.
Snowhill, Justin Porter; Winfield.
Sperry, Edna Pearl; Cherokee.
Sperry, Ollie Barton; Cherokee.
Staib, James R.; Pittsburg.
Starr, Carrie Beatrice; Scott City.
Stentz, Emma; Independence.
Stephens, Sara; Pittsburg.
Stevens, Lula Agnes; Weir.
Stevens, Mrs. Tempa Lucity; *Hume, Mo.*
Stewart, Marcell Elder; Weir.
St. Clair, Hugh; Pittsburg.
St. John, Agnes Gladys; Pittsburg.
Stocking, Esther M.; Pittsburg.
Streng, Edna Edith; Chetopa.
Summers, Ruth Prudence; Pittsburg.
Taggart, Mamie Rosalie; Elk City.
Tarkington, Mildred Evangeline; Oswego.
Taylor, Leona Irene; Dearing.
Teas, Roy Dale; Stark.
Teegarden, Goldie Maude; Eureka.
Todd, Nellie Gwendolyn; Altamont.
Thayer, Harry Colter; *Muskogee, Okla.*
Theis, Nellie; Weir.
Thomas, Mother Riechert; Paola.
Thomas, Eva; Pittsburg.
Thomas, Lona Marion; Pittsburg.
Thurman, Odena; *Sulphur Springs, Tex.*
Tomlinson, John R.; Grenola.
Tompkins, G. R.; Portland.
Tourtelot, Mrs. G. E.; Galena.
Towner, Cortie B.; Ness City.
Trice, Helen; Pittsburg.
Truxal, Ethel S.; Hoisington.
Tunnell, Mary Ellen; Pittsburg.
Walker, Bertha Beatrix; Pittsburg.
Walker, Florence Helen; Cunningham.
Walker, Ione Adelbert; Pittsburg.
Walter, Mary Luella; Altamont.
Waltz, Ruby Ann; Pittsburg.
Watson, Neva Le Nore; Pittsburg.
Webb, William; Pittsburg.
Whitaker, Alice Cleone; Pittsburg.
Whitaker, Catherine Floyr; Pittsburg.
White, Elizabeth Jennings; Pittsburg.
White, Florence; Weir.
Wilkins, Lucy Belle; Cherokee.
Williams, Elsie; Chetopa.
Williams, Roumania; Independence.
Williams, Winifred Merl; Winfield.
Wisner, Mary Morley; Iola.
Wood, Clemmer R.; Independence.
Wood, Mary Beatrice; Pittsburg.
Wright, Helen Mae; Topeka.
Yates, Robert C.; Pittsburg.
Ziegler, Henry Thomas; Pleasanton.
Zimmerman, Rebecca Alice; Olathe.

COLLEGE FRESHMEN.

Abby, Olivia J.; Topeka.
Adams, Edna Dorothy; Oswego.
Allen, Rose; Fort Scott.
Ambrose, Sister Mary; Wichita.
Amos, Almy Ray; St. Paul.
Anderson, Helen Rose; Thayer.
Andrew, Leroy B.; Pittsburg.
Applebaugh, Ethel R.; Cherryvale.
Bachelder, Robert Nelson; Frontenac.
Bagg, William Gilbert; *Des Moines, Ia.*
Bailey, Dixie Lee; Pittsburg.
Baker, Harriett M.; Oswego.
Baker, Lillian Vee; Arcadia.
Baker, Myrtle Mae; Pittsburg.
Baldwin, F. Burton; Fall River.
Barlie, Alden M.; Minden.
Barcus, Bessie; Scammon.
Barnard, Lelia May; Wichita.
Barnard, Nellie Marian; Wichita.
Barnes, Della; Parsons.
Barnes, Mildred Agnes; Earlton.
Bass, Mary Buford; *Joplin, Mo.*
Bates, Mary Esther; Prescott.
Baugher, James Wallace; McCune.
Beal, Mamie G.; *Omaha, Neb.*
Becket, Rowena Marie; Garden City.
Bicknell, Hazel Delle; Pittsburg.
Bird, Gladys Marie; Pittsburg.
Bird, Ethel May; Pittsburg.
Black, Charles; Pittsburg.
Blackburn, Audrey; Parsons.
Blackmore, Anna B.; Havana.
Bomhoff, Coral E.; Pittsburg.
Bold, Maggie; Frontenac.
Boughton, Georgie Henrietta; *Joplin, Mo.*
Bowlus, Lois Eleanor; Columbus.
Boyce, Mabel Benita; Galena.
Bozick, Grace Agnes; Frontenac.
Brackshaw, James; Kansas City.
Brakey, Maude Marie; Neodesha.
Brands, Bessie Margaretta; Great Bend.
Bray, Jennie May; Oswego.
Brewster, Persis Cynthia; Rosedale.
Brian, Floyd Sylvester; Derby.
Brisbin, Leona May; Scammon.
Brock, D. C.; Altamont.
Brogan, Irene Mary; St. Paul.
Brown, Grace; Arcadia.
Brown, Irma Elizabeth; Pittsburg.
Bruns, Clara Elinor; Oswego.
Bryant, Helen Marguerite; *Joplin, Mo.*
Buckles, Ruby; Mound City.
Buehler, Hazel Grace; Oswego.
Burkholder, Grace Catherine; Coffeyville.
Burgert, Ruth; Sterling.
Burnett, Cullen Ingomar; La Cygne.
Burnett, Mabel; Parsons.
Burns, Mrs. Lena Yose; Coffeyville.
Caldwell, Florence Emma; Arcadia.
Cain, Grant William.
Cameron, Pearl; Oswego.
Canville, Catherine; Chautauqua.
Carey, Eugenia; Pittsburg.
Carey, Mary R.; Osage City.
Carlson, Mae Lena; Cherokee.
Carmichael, Charles; *Webb City, Mo.*
Carmody, Marie Theresa; *Joplin, Mo.*
Carney, Georgia O'Hammil; Galena.
Carnagey, Charlsie Marie; La Cygne.
Carpenter, Blanche Edythe; Boicourt.
Carroll, Mary; Forntenac.
Caskey, Nadine Margaret; Pittsburg.
Cassidy, Mary; Independence.
Caudle, Velma; Edna.
Chadwick, Aquilla Ophelia; Pittsburg.
Charles, Leora Yvette; Independence.

COLLEGE FRESHMEN—*continued.*

Chase, Ruby May; Iola.
Chegwidden, Leah Hortense; Pittsburg.
Cherblanc, Marguerite; Frontenac.
Chitty, Josephine Louise; Fort Scott.
Christenson, Ethel Christene; Mineral.
Christmore, Esther Clare; Edna.
Clark, Anderson Edmond; Parsons.
Clark, Lacy Naomi; Parsons.
Clarke, Millicent Pearl; Pittsburg.
Claxton, Clarence; Oswego.
Claxton, Minnie May; Oswego.
Cleavinger, Hattie; Lawemont.
Cline, Elsie Lea; Fredonia.
Cline, John Marvin; McPherson.
Cole, Mildred Floy; Parsons.
Coles, Winifred Aline; *Joplin, Mo.*
Comer, Flossie Kathryn; Mulberry.
Comfort, Sylvia Etta; Mulberry.
Conboy, Florence; *Joplin, Mo.*
Conrad, Anna Marie; Pittsburg.
Cooper, Winifred Anna; Savonburg.
Copeland, Pearl; Wayside.
Cornelius, Bessie F.; Girard.
Costello, Mary Elizabeth; Columbus.
Costigan, Catherine Julia; Ottawa.
Cover, William Paul; Anderson.
Coverston, Helen Louise; Pittsburg.
Crites, Windess E.; Farlington.
Croucher, Mary Marguerite; Osage City.
Cunningham, Helen Faith; Havana.
Curless, Marjorie; Mulberry.
Dack, Forrest Lealand; *Muskogee, Okla.*
Daily, Vera May; Douglass.
Daniel, Claybourn Alva; *Aline, Okla.*
Daugherty, Julia Ouida; Parsons.
Danner, William; Pittsburg.
Davidson, Alda; Girard.
Davied, Ferdinand Joseph; St. Paul.
Davied, Mrs. Stella; St. Paul.
Davis, Artie; Frontenac.
Davis, Harry; Galena.
Davis, Thomas Ezra; Bartlett.
Davis, Mabel Mary; Mulberry.
Davies, Mary Ann; Riley.
DeArmond, Ruth; Caney.
DeGier, Lela Emeline; Coffeyville.
Delmar, Oliver Francis; *Kiefer, Okla.*
Dennis, Amy Frances; McCune.
Denney, Nannie B.; Independence.
Denney, Julia; Independence.
Devereux, James Marks; Weir.
Devining, Gussie; Edna.
Devining, Verdie Katherine; Edna.
Dignan, Julia Christine; Nickerson.
Dice, Frieda Blanche; Erie.
Dolan, Ellen Mae; Pittsburg.
Doles, Iva Edith; Haven.
Dopking, Hattie; Frontenac.
Doty, Alice M.; Osage City.
Doty, Charlotte; Pittsburg.
Doty, Elizabeth; Girard.
Doty, Jennie Blossom; Longton.
Doty, Silba Myrtle; Columbus.
Doughman, Leslie Leighton; Mound Valley.
Downing, Mabel Evelyn; *Joplin, Mo.*
Drake, Jennie; Iola.
Dugan, Josephine Alma; Galena.
Dunbar, Robert; Weir.
Dunn, Eupha Lavon; Girard.
Duvall, Nellie S.; West Mineral.
Edwards, Earl P.; Caney.
Eichhorn, Elizabeth; Frontenac.
Ellington, E. May; Independence.
Endicott, Dencie Winnie; Arkansas City.
Ennis, Alice Kathryn; Coffeyville.
Eswick, Lois; Columbus.
[illegible], Josephine Pauline; Fort Scott.
Esch, Eugenia Rosalie; Pittsburg.
Estes, Floyd; Paola.
Evans, Mary Olive; Columbus.
Fager, Mary Cecelia; St. Paul.
Falls, Minnie Ellen; Altoona.
Falls, Gwendolyn; Altoona.
Falls, Olive; Altoona.
Farrimond, Mildred; Pittsburg.
Feemster, Virgil C.; Fort Scott.
Fenner, Cecil Frances; *Carthage, Mo.*
Ferguson, Myrtle Estella; Pittsburg.
Fesmire, Russel; Rose Hill.
Field, Eva Fern; Columbus.
Finical, Gertrude Lois; Girard.
Fisher, Anna Kathryn; Frontenac.
Fisher, Hilda; Frontenac.
Fisher, Iva Fern; Harper.
Fitzgibbon, Marguerite Elizabeth; Oswego.
Fitzpatrick, Sister M. Ignatius; Paola.
Flater, Mertie Estella; Hepler.
Fladger, Gustav K.; *Honey Grove, Tex.*
Fleming, John Allen; Iola.
Flottman, Arnold Louis; Chanute.
Flynn, Fannie; Pittsburg.
Flynn, Mae Constance; Pittsburg.
Foster, Jennie B.; Fredonia.
Fowler, Robert Nelson; Greenleaf.
Friend, Stella Arvilla; Chicopee.
Fugate, Mrs. Angeline P.; Oswego.
Gale, Mae Lena; Mulberry.
Gardner, Aville Q.; Girard.
Gardner, Clarice Mae; Frontenac.
Gardner, Norma Leona; Elsmore.
Gees, Dorothy Catherine; Walnut.
Geir, Alice Blache; Pittsburg.
Gibson, Catherine A.; Pittsburg.
Gilbert, Alva Richard; Pittsburg.
Gilbreath, Gladys; Pittsburg.
Gill, Raymond F.; Lyndon.
Glaser, Helen Henrietta; Pittsburg.
Glynn, Opal Oretta; Topeka.
Graham, Mary Ellen; Chicopee.
Godsey, Viola Louise; Iola.
Goodwin, Eperva Margaret; Pittsburg.
Goodwin, Will Oresta; Baxter Springs.
Grabske, Paul Raymond; Rosedale.
Griffith, Frank William; Pittsburg.
Grimm, Nina Juanita; Pittsburg.
Hackney, Effie Belle; Hallowell.
Hailey, Elsie Rosalba; Coffeyville.
Hallam, Mrs. Ethel Higgins; Columbus.
Halbert, Mary Cecile; Chetopa.
Halliday, Margaret; Pittsburg.
Hamby, Anna Olena; *Nevada, Mo.*
Hamilton, Chas.; Arcadia.
Hamilton, Laura; Menlo.
Hamrick, Mary Myrtle; Pittsburg.
Hamrick, Ruth Helen; Pittsburg.
Haney, Blanche; Weir.
Hanson, Helen Gladys; *Carterville, Mo.*
Harrell, Mata A.; Pleasanton.
Hartman, Lloyd Lawrence; McCune.
Hatton, Ethel Mary; Pittsburg.
Hayman, Abbie Ruth; *Van Buren, Ark.*
Heady, Bernice Primrose; Pittsburg.
Heck, Agnes Marie; Pittsburg.
Hefley, Gertrude Lucile; Morehead.
Heidelberg, Mae; Pittsburg.
Heintzman, Sister Benedict; Paola.
Heller, George William; Scammon.
Helm, Anna Lena; *Webb City, Mo.*
Helm, Florence; *Webb City, Mo.*
Helphrey, Lorena Helen; Wichita.
Hemphill, John Graham; Chanute.
Hemphill, Margaret Ellen; Chanute.
Henderson, Estella R.; Pleasanton.
Hendricks, Lillith Lenore; Sedan.
Henley, Eleanor; *Carthage, Mo.*
Henry, Ellsworth; Labette.
Henry, Leota Teresa; Morehead.
Herring, Della M.; Fort Scott.
Heryford, Omer; Girard.
Heryford, Nora Lee; McCune.

COLLEGE FRESHMEN—*continued.*

Hess, Ida Alice; Independence.
Hewit, Hildegarde; Parsons.
Hewitt, Hazel Bell; Chetopa.
Heyburn, Pearl Agnes; *Monett, Mo.*
Hibbs, Russell Robert; *Pretty Prairie, Okla.*
Hillegas, Rhoda Elizabeth; Chetopa.
Hoback, Athel; Girard.
Holland, Emma Lora; Pleasanton.
Holley, Prudence Minerva; Oswego.
Holt, Era Madeline; Kansas City.
Hoppes, Ruth V.; Mulberry.
Hotchkiss, Margaret; Girard.
Howard, Helen Grace; Hepler.
Howell, Donna Dee; Labette.
Howard, Ivy Ruth; Cherryvale.
Hubbard, Edith Rachel; Pittsburg.
Hubbell, Olive Grace; Pittsburg.
Hubert, Claire Leona; Minden.
Huffman, Claude Irvil; Nickerson.
Hughes, Elva Francis; Independence.
Hughes, Josephine Hubbard; Pittsburg.
Hunt, Besse Cecilia; Frontenac.
Hunter, Bessie Leona; Morse.
Hunter, Nina Florence; Iola.
Ireland, Ruth; Fort Scott.
Jack, Pearl Irma; Clay Center.
Jackson, Jennie Bell; *Muskogee, Okla.*
Jackson, Lillian Agnes; Pittsburg.
James, Starling William; Pittsburg.
Jenkins, Natalie G.; Topeka.
Jarrett, Margery Elizabeth; Fort Scott.
Jarrell, Geneva Elaine; Pittsburg.
Jernigan, Olive; Osage City.
Jewell, Helen Cornelia; Fulton.
Jewell, Nellie Rose; Fulton.
Johnson, Anna Pauline; Urbana.
Johnson, Esther Walberg; Savonburg.
Johnson, Homer E.; Eureka.
Johnson, Jessie Osie; Oxford.
Johnson, Lee; Weir.
Johnson, Richard Percivil; Oswego.
Johnson, Samuel Bennett; Colony.
Johnsten, Paul Brewster; Delphos.
Jolly, Waneta Ethel; Longton.
Jones, Esther Barbara; Pittsburg.
Jones, George L.; Columbus.
Jones, Gladys Ann; Pittsburg.
Jones, Lizzie; Frontenac.
Jones, Mary Gwendolyn; Pittsburg.
Jones, Mary Jane; Independence.
Kaufmann, Charlotte Sophia; Fort Scott.
Kauffman, Verna Mae; Mound Valley.
Kautz, Bernice Quince; Girard.
Kautz, Iowa; Girard.
Keetch, Celora Belle; *Drexel, Mo.*
Keith, Mrs. Leanor Wilson; Iola.
Keith, Minnie Edith; *Joplin, Mo.*
Keller, Esther Edith; Girard.
Kelley, Lily Louvina; Pittsburg.
Kelley, Prudie; Pittsburg.
Kennedy, Elizabeth Elzina; Opolis.
Kenney, Margaret Lucy; Mound City.
Kenoly, Wilson; Columbus.
Kidder, Clarence Hull; Pittsburg.
Kiesel, Edna Annette; Rosedale.
Killough, Elsie Louise; Pittsburg.
Kimmel, Walter L.; Cherokee.
King, Agnes Mary; Pittsburg.
King, L. Jay; Pittsburg.
Kirkpatrick, Olive E.; Augusta.
Kirkpatrick, Sylvia Francita; Independence.
Kisling, Beatrice Sylvia; Kansas City.
Knight, Corinne Mae; Fort Scott.
Kniveton, Ruth Sara; Pleasanton.
Koontz, Andrew; Columbus.
Koontz, John H.; Columbus.
Krog, Margaret; Girard.
Kuykendall, Dora Ethel; Columbus.
Kuyger, Ada Mabel; McCune.
Lally, Nelle Veronica; Wichita.
Lane, Edessa Gandy; Coffeyville.
Larson, Jenny Christine; Yale.
Laughlin, Nettie Beryl; *Drexel, Mo.*
Lawrence, Frances Isabel; Nickerson.
Lawrence, Josephine Ellen; Nickerson.
Leaman, Flora Kathryn; Monmouth.
Leib, Dean Clyde; Edna.
Leigh, Mary; Girard.
Leggett, Lucy Anna; Columbus.
Lenski, Frank; Pittsburg.
Lipman, Julian; Pittsburg.
Limb, John R.; Arcadia.
Lindsay, Nellie Mae; Cherokee.
Lindburg, Linda Maria; Osage City.
Litton, Glenn B.; Pittsburg.
Livengood, Violet Belle; Pittsburg.
Livingston, Ruth Esther; Edna.
Lockwood, Margaret Ellen; Mound City.
Lockwood, Chester Alfred; Mound City.
Logan, David DeFrance; Lawrence.
Longstaff, Anna; Scammon.
Lucas, George Washington; Pittsburg.
Lucke, Gladys Esther; Girard.
Lyerla, Angie E.; Chanute.
Lyon, Bessie Ann; Larned.
Lyon, Mrs. Fannie; Fredonia.
McCarthy, Loretta; Parsons.
McCleary, Hazel Alphonizine; Iola.
McCormick, Grace; Scammon.
McCracken, Olive B.; Farlington.
McCue, Zella; Mound Valley.
McDaniel, Gladys Louise; Pittsburg.
McDole, Mary Vira; Mound Valley.
McDonald, Edna Rhedythe; *Sherman, Tex.*
McGhie, Corinne Rebecca; Columbus.
McGinnis, Jennie B.; Cherokee.
McGregor, Jenette Alethea; Columbus.
McHale, Josie; Fulton.
McKee, Faye M.; Elk Falls.
McKeon, Agnes G.; Coffeyville.
McKimmey, Harry William; Fort Scott.
McKimmey, Lottie Frances; Fort Scott.
McLaughlin, Elizabeth; Monmouth.
McNary, Lucile Elizabeth; *Greenville, Ky.*
McPeck, James William; Arkansas City.
Madden, Horton.
Magley, Edyth Merle; *Joplin, Mo.*
Mahan, Alice La Verne; Pittsburg.
Malleis, Edward Herman; Halstead.
Malloy, David; Pittsburg.
Malloy, Kate; Cherokee.
Marie, Sister Mel; Wichita.
Marshall, Zella Amanda; Fort Scott.
Marr, Annye Pauline; *Ashdown, Ark.*
Martin, Samuel David; Horace.
Martin, Goldie Pearl; Englevale.
Marvin, Elizabeth Jane; Pittsburg.
Masterson, Anna Irene; Scammon.
Matthews, Jess Walton; La Harpe.
Mathews, Wm. H.; Pittsburg.
Maudlin, Della R.; La Harpe.
Maxwell, Elizabeth M.; Pittsburg.
Mechtildis, O'Mara Sister; Wichita.
Michels, Elsie Lillie; Walnut.
Michels, Louise Julia; Pittsburg.
Michie, Troy Willard; Opolis.
Middleton, Anna Theodora; Fredonia.
Miller, Effie Myrtle; *Webb City, Mo.*
Miller, Ethyl Ray; *Sherman, Tex.*
Miller, Hattie; Altamont.
Miller, Emma DeLilla; Galena.
Miller, Lena Marie; *Joplin, Mo.*
Miller, Merle; Savonburg.
Minniear, William Nelson; Altamont.
Mitchell, Esther Edna; Rosedale.
Mitchell, Eva Pearl; Pleasanton.
Mitchell, Henrietta Gladys; Columbus.
Monahan, Mary Margaret; Frontenac.
Monahan, Nora Delphine; Frontenac.
Moore, Edwina Florence; Pittsburg.
Morgan, Gladys; Girard.

COLLEGE FRESHMEN—*continued.*

Morgan, Louise Dollie; Chetopa.
Morine, Frances F.; *Bluff City, Iowa.*
Morris, Ava Lorene; Greenburg.
Mortimer, Vera Corinne; Cherryvale.
Mullen, Harvey; Stafford.
Mulvaney, Gladys Erskine; Pittsburg.
Murphy, Helen Delaphine; Frontenac.
Murray, Pearl; Parsons.
Myers, Louise Marie; Haven.
Myers, Nellie; Cherokee.
Neely, William Hugo; Kansas City.
Neighbors, Neville Eliza; Columbus.
Nelson, Reginald John; *Dearing, Mont.*
Nevins, Theodora Flossie; Edna.
Newlands, Paul Ernest; Columbus.
Nipple, Florence Marie; Mulberry.
O'Brien, Edward Paul; St. Paul.
O'Brien, Olive M.; Independence.
O'Conner, Irene Edith; Fort Scott.
O'Hara, Kathryn Nora; Frontenac.
O'Hara, Josephine; Frontenac.
Ogilvie, Annie; *Tulsa, Okla.*
Oldham, Georgia Anna; Mulberry.
Oldham, Mary Elizabeth; Pittsburg.
Oles, Grace Mattie; Girard.
Oliver, Hazel Emma; Attica.
Olson, Ella Genevieve; Savonburg.
Ossanna, Matilda Mable; Cherokee.
Painter, John Leroy; McCune.
Parker, Lois Elizabeth; Indepedence.
Parrish, Margie Maud; Pittsburg.
Pate, Ethel Mary; Walnut.
Patterson, Lois Leone; Esbon.
Paxton, Mary Cornelia; Oswego.
Payton, Walter Benford; Pittsburg.
Peak, Emma Victoria; Girard.
Peddycord, Lydia Mae; Wilsey.
Perdue, Edith Belle; Opolis.
Person, Laura Elizabeth; Galena.
Peterson, Burton Clifford; Nickerson.
Peterson, Ruby Ruth; Pittsburg.
Pfeifer, Ruth Adaline; Columbus.
Phillips, Charles; Girard.
Phillips, Wm. Earl; Pittsburg.
Plum, Lucia Ann; Walnut.
Pitt, Edwin; *Austin, Tex.*
Pittenger, Nellie Marie; Cherryvale.
Poage, Frank Cessna; *Muskogee, Okla.*
Pontius, Vere Lorraine; Erie.
Popkins, Charles Wesley; Halstead.
Porter, Mrs. Caroline W.; Parsons.
Powell, Rosalind; Osage City.
Price, Annabelle; Gas.
Price, Bessie Lee; Coffeyville.
Price, Frances Luller; Paola.
Pritchett, Mary Elizabeth; Pittsburg.
Puckett, Flora Alice; Coffeyville.
Pyle, Ruth; Farlington.
Rader, Velva; Caney.
Rambo, Leona Ruth; Mulberry.
Ramm, Dorothy; Baxter Springs.
Randall, Leota Grace; Cherokee.
Randall, Marie; Altamont.
Ransom, Donald Earl; Pittsburg.
Ratliffe, Hazel Helen; Wichita.
Reardon, Allie Ruth; Labette.
Record, Anna Grace; Kansas City.
Reed, Mary Beula; Chetopa.
Reeves, B. Pearl; Grenola.
Reinhart, Neva LaRue; Parsons.
Renfro, J. Horace; Pittsburg.
Reynolds, Amy; Frontenac.
Reynolds, Anna Rebecca; Pittsburg.
Richards, Robert; *Beatrice, Neb.*
Richards, Marietta; Girard.
Richardson, Mabel Claire; Parsons.
Ridley, Jennie Louise; Cherokee.
Ridgeway, Nenna Mildred; Edna.
Riggle, Lloyd Clinton; Pittsburg.
Riordan, Sister Bernardine; Parsons.
Roberds, Tracy M.; Caney.
Roberts, Lillie Lee; Pittsburg.
Roberts, Luva; Girard.
Roitz, Lillie Helen; Arma.
Robinson, Bennie S.; *Tonkawa, Okla.*
Roe, Randolph M.; Pittsburg.
Rose, Myra Estella; Fulton.
Rose, Georgia Mae; Leon.
Roseberry, Mabel Celeste; Erie.
Roseberry, Minnie Loretta; Erie.
Roseberry, Minnie; Erie.
Ross, Mollye Bernice; Topeka.
Royse, Edward Epperson; Chetopa.
Royse, Florence Minnie; Pittsburg.
Rude, Elsie Minnie; Labette.
Russell, James McC.; *San Antonio, Tex.*
Russell, Richard; Mineral.
Sanderson, Minnetta C.; *Joplin, Mo.*
Schaffner, Hezel Marie; Olathe.
Schloeman, Anna Lou Ella; Baxter Springs.
Schlichting, Ervest C.; Pittsburg.
Scott, Edna Pearle; Colony.
Scott, Wilma; Pittsburg.
Schreiner, Emmett Harry; Columbus.
Schwab, Clarence Archibald; Pittsburg.
Schwab, Hester Ellen; Pittsburg.
Scranton, Arthur; Pittsburg.
Seeley, Hattie Maria; Pittsburg.
Seymour, Kate B.; Mound City.
Shearer, Flora Fern; Columbus.
Shearer, Gladys Eva; Fredonia.
Sheldon, Mabel Marie; Altamont.
Shellhorn, Nina Josephine; Erie.
Shelley, Clair William; *Hastings, Neb.*
Shewalter, Ruth; Galena.
Shirk, Glenn Rutan; Galena.
Shirley, Sophia M.; Osage City.
Skelton, Evelyn Gertrude; Pittsburg.
Sleight, Maria Daisy; Parsons.
Smiley, Bessie Estelle; Mulberry.
Smiley, Maggie Anna; Pittsburg.
Smith, Anna Grace; Pleasanton.
Smith, Celia Marie; Liberty.
Smith, Gladys E. M.; Cherryvale.
Smither, Elbert S.; Pittsburg.
Snead, Gertrude; Labette.
Sneller, Claud Bryan; Rossville.
Sneller, Lily May; Rossville.
Snider, Alta; Savonburg.
Snider, Mamie L.; Pittsburg.
Snider, Ruth; Savonburg.
Snow, Edith M.; Cherokee.
Southard, Elmer Longo; Dexter.
Speck, Ruth Marie; Pittsburg.
Speece, Aura; *Carthage, Mo.*
Spicer, Herbert Cecil; Pittsburg.
Stafford, Mary Trix; Osage City.
Stamm, Alene; Pittsburg.
Starrett, Agnes Cora; Columbus.
Starrett, Royce E.; Scott City.
Stebbins, Christine; Columbus.
Stephens, Etta Maurine; Columbus.
Stephens, Lee Lavon; Pittsburg.
Sterling, Claude McCoy; Fort Scott.
Stewart, Alma; Halstead.
Stewart, Bertha Luella; Cherryvale.
Stinson, Mary Esther; Carlyle.
Strasser, William Edward; Hiattville.
Strickland, Clara; Pittsburg.
Sturgeon, Hays B.; Eureka.
Swanson, Lena Elizabeth; Chetopa.
Swanson, Mary Laura; Chetopa.
Sylvester, Gus; Frontenac.
Tanner, Ethel Aura; Cherryvale.
Tate, Nina; Coffeyville.
Taylor, Gertrude Flora; Dearing.
Taylor, Roy Ernest; Mulberry.
Taylor, Russell Lowell; Iola.
Tedlock, Neva E.; Columbus.
Tharp, Ruth; Monmouth.

COLLEGE FRESHMEN—*continued*.

Thomas, Edna Irene; Pittsburg.
Thomas, Sister Mary; Wichita.
Thompson, Irma Gertrude; Paola.
Thompson, Lawrence Everette; Olathe.
Thompson, Lula F.; Girard.
Thompson, Winona Doris; Altamont.
Tilton, Ruth Elizabeth; Edna.
Trout, Ana Genevieve; Pittsburg.
Turner, Lon M.; Pittsburg.
Turrill, Coral Mary; Weir.
Turrill, Georgia Anna; Weir.
Twyman, Virgil Samuel; Pittsburg.
Tyler, May Elizabeth; *Joplin, Mo.*
Ulrich, Elsa Elizabeth; Galena.
Underhill, W. Blanche; McCune.
Unseld, Louise Fern; *Cedar Rapids, Neb.*
Utz, Clara Belle; Pittsburg.
Utz, Mary Agatha; Pittsburg.
Van Houten, Ruth Elder; Pittsburg.
Van Norsdall, Weir; Arma.
Van Sickle, Hazel Vera; Fulton.
Vaughn, Alma Mae; *Wolfe City, Tex.*
Veerkamp, Harold Clark; Baxter Springs.
Vincent, Mae; Erie.
Vining, Geo. H.; Neodesha.
Waddle, Elsie Lenora; Chanute.
Waite, Fannie; Pittsburg.
Walker, Blaine Earl; Pittsburg.
Walker, Irene; *Wolfe City, Tex.*
Walters, Besse; Scammon.
Ward, Lora Isabelle; Geuda Springs.
Ward, Earl L.; Great Bend.
Warner, Dora May; Cherryvale.
Washington, Marguerite Hotchkiss; Pittsburg.
Watson, Lenora Nordica; Kansas City.
Webb, Ethel; Sedan.
Weber, Mary Louise; Pittsburg.
Weber, Berthold Walter; Halstead.
Welch, Louetta Carmon; Pittsburg.
Wellington, Dale K.; Columbus.
Welton, Grace Mae; Princeton.
West, Orion P.; Kansas City.
Wharton, Lowell B.; Lyons.
Wheelock, Delia; Girard.
Whitaker, Gladys; Pittsburg.
White, Minnie Victoria; Pittsburg.
White, Vera Willnette; Uniontown.
Wicks, Mary Ellen; Pittsburg.
Wilkins, Alma Belle; Cherokee.
Wilkins, Lora Mildred; Cherokee.
Wilkinson, Walter Garrett; Goddard.
Williams, Ada Lee; Weir.
Willard, Loneta Zelma; Arcadia.
Williams, Ceshel C.; Pittsburg.
Williams, Delsie Elizabeth; Pittsburg.
Williams, Frank Charles; Pittsburg.
Williams, Sophia; Fort Scott.
Williams, Mrs. Lizzie; Peru.
Williams, Winnie Gladys; Arcadia.
Williamson, Mary; Scammon.
Wilson, Bonnie Edith; Opolis.
Wilson, George Robert; Halstead.
Wilson, Helen Winifred; Burden.
Wilson, Katie E.; McCune.
Wimp, Marguerite; Pittsburg.
Wims, Beulah; Topeka.
Wingart, Frances Mae; Topeka.
Winter, Thomas Daniel; Pittsburg.
Wixon, Emma; Columbus.
Wohlford, Olive May; Harper.
Wolfe, Mary L.; McCune.
Wood, Clemmer R.; Independence.
Wood, Myrtle; Mulberry.
Worden, Austin James; Wichita.
Wright, Edith; Weir.
Wright, Faye Gladys; Weir.
Wright, Julia Gertrude; Weir.
Wright, Ruby Marie; Weir.
Xavier, Sister Mary; Wichita.
Young, Clara Amelia; Bayneville.
Young, James Robert; Galena.
Young, Rachel Fern; Coffeyville.
Zappa, Marie Frances; Weir.
Ziegelasch, Adrian Walter; Junction City.

COLLEGE SPECIALS.

Adair, Dora Williams; *Pine Bluff, Ark.*
Akins, Blanche Estelle; Pittsburg.
Alexander, Sadie M.; Pittsburg.
Angell, Rowena Lavon; Pittsburg.
Ashby, Helen Dorothy; Girard.
Barnes, Roy Douglas; Earlton.
Barnthouse, Ethel Angell; Pittsburg.
Barrett, L. H.; Baxter Springs.
Bean, Estella Catherine; Gross.
Betts, May Belle; Columbus.
Blevans, Landona; *Fairland, Mo.*
Brous, Daisy Pearl; Pittsburg.
Brown, Payl Harold; Topeka.
Burks, Dorothy Carry; Pittsburg.
Buehre, Fred Acton; Pittsburg.
Bull, Mrs. A. A.; Pittsburg.
Caldwell, C. Ellsworth; Pittsburg.
Carl, Virginia Hester; Arma.
Cave, Mrs. Edna; Pittsburg.
Chamberlain, Clara Nancy; Pittsburg.
Chambers, Estella Mae; Dearing.
Childs, Cora O.; Coffeyville.
Clarkson, Pearl; Carthage.
Cockerill, Robert Clay; Pittsburg.
Collier, Ruth Albin; Pittsburg.
Collins, Mrs. Elsie; Pittsburg.
Cook, L. W.; Cherokee.
Courtright, Raymond Orland; Pittsburg.
Cropper, Gladys Beatrice; Pittsburg.
Curran, Mrs. M. F.; Pittsburg.
Davidson, W. W.; Nickerson.
Davis, Howard; Gas.
Dickerson, Frank H.; Pittsburg.
Doring, Gertrude; Pittsburg.
Edmunds, Nelle; Independence.
Eisenhart, Beatrice Eleanor; Franklin.
Errebo, Mrs. Florence; Pittsburg.
Evarista, Sister Mary; Frontenac.
Faby, Mrs. Winifred; Pittsburg.
Fenn, Mary Nelle; Joplin, Mo.
Ferguson, Kate; Parsons.
Fisher, Eva Rebecca; Morehead.
Fogleberg, Ida Marguerite; Pittsburg.
Forsyth, Floyd David; Pittsburg.
Foster, Agnes; Morehead.
Foster, Fern Helen; Joplin.
Fritter, Eugene Garrison; Pittsburg.
Goodhall, Chas. Albert; Pittsburg.
Graham, Myrtle Burton; Pittsburg.
Gregg, Anna Marie; Frankfort.
Gregory, Sister Mary; Wichita.
Gudgen, Blanche; Pittsburg.
Guengerick, Mrs. Ernest; Pittsburg.
Hall, Mrs. Hazel Marie; Pittsburg.
Halliday, Mary Jane; Mulberry.
Hanshaw, Gertie; Girard.
Hathaway, Isaac; Pine Bluff.
Henderson, Sallie; Columbus.
Henley, James Arthur; *Joplin, Mo.*
Hickman, Hazel; Pittsburg.
Hill, Wilda E.; Pittsburg.
Holmes, Neva; Pittsburg.
Hughes, Mrs. J. W.; Coffeyville.
Hughes, John W.; Coffeyville.
Hutchinson, Mrs. J. L.; Pittsburg.
Hyland, Sister Delphine; Wichita.

COLLEGE SPECIALS—*continued.*

Hyndman, James Miller; Beulah.
Irwin, John Wm.; Chanute.
Jackson, Nora Anna; Neodesha.
Johnson, Ellen Christena; Minden.
Jones, Esther B.; Rich Hill.
Jones, Maggie Rowland; Pittsburg.
Kane, Mrs. Adah; Pittsburg.
Kelly, Katherine Eulalia; Frontenac.
Kohler, Velma; Pittsburg.
Lang, Hester Ann; Kanopolis.
Lauderdale, Ira O.; Joplin.
Lisk, Maureau May; Lenexa.
Lloyd, Jennie Fern; Pittsburg.
Longerger, Katharine; Parsons.
Long, M. May; Erie.
Lowe, Edna Beard; *Tulsa, Okla.*
Lucas, Alma; Monmouth.
Lucas, Pearl Macy; Columbus.
McCoy, Faye; Pittsburg.
McCracken, Anna Zoe; Bolivar.
McGuire, Mrs. H. A.; Pittsburg.
McJunkin, Anna; Pittsburg.
McKnight, Jessie Isabelle; Cherryvale.
Martin, Edna May; Mindenmines.
Menichetti, Mary Vivian; Frontenac.
Menichetti, Vivian Patton; Frontenac.
Miller, Mrs. C. A.; Pittsburg.
Mitchell, Thelma L.; Pittsburg.
Mosteller, Virginia; Columbus.
Nation, Mrs. Dora; Erie.
Nellis, Lottie; Pittsburg.
Nesch, Kathryn Helen; Pittsburg.
Nystrom, Laura Christene; Columbus.
O'Connell, Kathleen Elizabeth; Independence.
Oliphant, Bess; Columbus.
Orr, Anna M.; Fall River.
Owensby, Dr. Oscar Monroe; Pittsburg.
Paulson, Andrew Christopher; Kansas City.
Pearse, Earlwin A.; Edgerton.
Phillips, Edith Mae; Mulberry.
Prickett, Ethel Blanche; Carthage.
Provorse, Belle; Independence.
Randolph, John; Pittsburg.
Reasor, Mrs. Geo.; Pittsburg.
Reed, Eva Mae; Weir.
Remel, Arling Milton; Sylvia.
Revelette, Elizabeth Marie; Chautauqua.
Robb, Wallis; Pittsburg.
Robinson, Charles Shields; ***Armon, S. Dak.***
Robinson, John Alaivishus; ***Miles City, Mont.***
Rogers, Mrs. Nannie; Pittsburg.
Rosalia, Sister Mary; Wichita.
Rose, Marion; Pittsburg.
Rule, Edna May; Wellington.
Russell, Vena Blanch; Redfield.
Sanders, Almeda May; Bennington.
Schrader, Mrs. Helen C.; Pittsburg.
Schwab, Mrs. Wm.; Pittsburg.
Scott, Noah Oscar; ***Andamsville, Ala.***
Shepley, Grace Basham; Pittsburg.
Shell, Bonnie Bessie; Pittsburg.
Shell, Violet Estelle; Pittsburg.
Smith, Mellie Lenore; Mulberry.
Spencer, Bertha A.; ***Carthage, Mo.***
Stephens, Faye; Walnut.
Stevens, Clarence E.; Pittsburg.
Stewart, Esther; Pittsburg.
Strob, George Alfred; ***Beatrice, Neb.***
Strode, Nellie Geneva; Sapulpa.
Stuart, Edna Rankin; ***Joplin, Mo.***
Stukel, Chas. Lewis; Pittsburg.
Swan, Wm. H.; Topeka.
Sweeney, Jessie Catherine; Pittsburg.
Talbott, Mina Corrinne; Wichita.
Tennyson, Hattie Adell; Nickerson.
Thomas, Mary Beulah; Topeka.
Thornton, Edith Alice; Pittsburg.
Tripp, Keba Alice; Pittsburg.
Tullis, Ella; Olathe.
Walker, Hazel May; Pittsburg.
Walker, Nellie Vivian; Pittsburg.
Weir, Marie D.; Weir.
Werme, J. A.; Girard.
West, James T.; Iola.
Westover, Maurice F.; ***Webb City, Mo.***
Whitmer, Marion Blume; Pittsburg.
Wilkins, John Gilbert; Cherokee.
Williams, Jim; Girard.
Williams, Laura Ethel; Arma.
Wiswell, Edna Irene; ***La Junta, Colo.***
Woolley, Lottie; Girard.
Wyatt, Lucretia Elizabeth; ***Fort Smith, Ark.***
Yeager, Della Mae; Baxter Springs.
York, R. A.; Fort Scott.
Zickgraf, Mary Lillian; Pittsburg.

HIGH SCHOOL SENIORS.

Alexander, Violet; Walnut.
Allen, Mae; Chanute.
Ames, Almy Ray; St. Paul.
Armstrong, Alfred Glen; Cherryvale.
Baysinger, Julia Emeline; Pittsburg.
Beasley, Pluma Coral; Pittsburg.
Bowen, Dorothy Margaret; Pittsburg.
Brandenburg, Merrill Francis, Pittsburg.
Burgess, Bernice Opal; Scammon.
Caffey, Marguerite; Pittsburg.
Clemens, Mamie; Pittsburg.
Cobb, Sara Genola; Pittsburg.
Edwards, Eva; Weir.
Eisenhart, Beatrice Eleanor; Franklin.
Ermey, Fred Lewis; Erie.
Ferguson, Minta Marie; Pittsburg.
Fulkerson, Eula Lorene; Pittsburg.
Galpine, Joseph Henry; Asbury.
Gibbs, Ruth; Pittsburg.
Gilbreath, Hazel; Pittsburg.
Grandle, Mina Catherine; Pittsburg.
Gude, Katheryne Mae; Weir.
Hackler, Lydia Opal; Pittsburg.
Heritage, Zilpha Lois; Elk City.
Humphrey, Eugene Putnam; Mulberry.
Henley, Cecil Martin; Garland
Hussey, Charles L.; Pittsburg.
Jates, Pearl Daisy; Farlington.
Jenkins, Marguerite Maron; Pittsburg.
Johnson, Esther Mattie; Pittsburg.
Jones, Nannie Dee; Pittsburg.
Lanning, Margaret; Frontenac.
Lanyon, Helen Dorothe; Pittsburg.
Lawson, Floyd Lee; Pittsburg.
Lee, Mrs. Eleanor L.; Parsons.
McKinley, Aubrey Glen; Pittsburg.
Markel, James Abram; Pittsburg.
May, Clara; Pittsburg.
Menichetti, Merrico; Frontenac.
Murphy, Nell Delaphine; Frontenac.
Needham, Sadie Catherine; Arcadia.
Oertle, Ruth May; Pittsburg.
Osborn, Denner Lee; Pittsburg.
Ott, Geraldine; Pittsburg.
Purgatorio, Bert; Frontenac.
Pendleton, Lucile Marie; Pittsburg.
Perkins, Leland Dudley; ***Carthage, Mo.***
Poling, Ethel Ione; Pittsburg.
Richards, Iva Lee; Pittsburg.
Ringle, Lloyd Clinton; Pittsburg.
Ross, Myrtle; Pittsburg.
Roush, DeWitt; Girard.
Rumbaugh, Luella Florence; Pittsburg.
Schneider, Hallie Marie; Pittsburg.
Seifert, Edna Marie; Pittsburg.
Seymour, Merril Elsworth; Pittsburg.
Sharp, Arnola Beatrice; Pittsburg.
Sheffield, Elva V.; Arcadia.

HIGH SCHOOL SENIORS—*continued.*

Simpson, Mae Lillian; Fulton.
Smith, Anna Eleanor; Pittsburg.
Smith, Marion Addison; Girard.
Starr, Grace Marjorie; Pittsburg.
Stites, Hazel Francis; Parsons.
Strong, Helen Amelia; Pittsburg.
Sweeney, Isadore May; Pittsburg.
Talbert, Howard Arthur; Pittsburg.
Taylor, Marjorie Cryselda; Circleville.
Tewell, Harold Royal; Pittsburg.
Verner, Eleanor Marie; Pittsburg.
Walker, John Raymond; Pittsburg.
Waltz, Geneva Madge; Pittsburg.
Whitehead, Cora; Girard.
Wilkinson, Cecil; Weir.
Wimp, Marguerite; Pittsburg.

HIGH SCHOOL JUNIORS.

Albertson, Doris Irene; Pittsburg.
Anderson, Beulah; Weir.
Anderson, Opal May; Pittsburg.
Avery, Goldie Ethel; Pittsburg.
Bachelder, Robert Nelson; Frontenac.
Baxter, Milton S.; Pittsburg.
Baxter, Ruth Patricia; Pittsburg.
Benedik, Mary Teresa; Franklin.
Benton, Arvilla Helen; Pittsburg.
Blackburn, Evelyn; Parsons.
Brennan, Naomi Marie; West Mineral.
Broadlick, Edith; Pittsburg.
Brown, Paul Harold; Topeka.
Butler, Violet Viola; Wauneta.
Carlton, Helen; Pittsburg.
Carter, Mabel; Great Bend.
Christner, Bertha Ada; Pittsburg.
Conklin, Ruth Lily; Weir.
Cook, Juanita Beatrice; Pittsburg.
Cowder, Harry Diehl; Pittsburg.
Culbertson, Ethel; Hepler.
Curran, Alice Teresa; Pittsburg.
Doss, George Washington; Pittsburg.
Dressler, Arnold; *Sweetwater, Tex.*
Duffy, Dave; Pittsburg.
Elder, Helen Leigh; Cherryvale.
Endicott, Marion Fred; Pittsburg.
Epley, Eva Mae; Beulah.
Ferguson, Jennie; Pittsburg.
Friel, Marjorie Mary; Pittsburg.
Gardner, Nellie Amanda; Pittsburg.
Gorden, Mildred; Independence.
Grubbs, George Bailey; Pittsburg.
Halliday, Mary Jane; Mulberry.
Hamilton, Annie; Arcadia.
Hamilton, Viola Blanche; Menlo.
Hixon, Otis Rolla; Redfield.
Hobson, Marie Elizabeth; Pittsburg.
Hobson, Vera Inez; Pittsburg.
Isom, Hazel Trinnie; Uniontown.
Jack, Selma Blanch; Chautauqua.
Keegan, Mary; Pittsburg.
Kelly, Anna; Frontenac.
Kelly, Paul Scott; St. Paul.
Kelly, Regina Anne; Frontenac.
King, Edith Julia; Pittsburg.
Knoll, Carl Lawrence; Pittsburg.
Landers, Marie Agnes; Hiattville.
Lanning, Margaret; Frontenac.
Leblica, Carmen Viola; Pittsburg.
Lehman, Henrietta Louise, Pittsburg.
Lemon, Robert Sheldon; Pittsburg.
McCall, Chas. J.; Pittsburg.
McFeaters, Ralph Cylde; Girard.
McGregor, Lillian Edith; Chicopee.
Maletz, Helen Rosetta; Pittsburg.
Mason, Agnes Grace; Fulton.
Matthews, Robley D. Evans; Pittsburg.
Mayfield, Edna Pearl; Chetopa.
Messer, Zola Mable; Fulton.
Milburn, Frank Neal; Grenola.
Mondragon, John David; Pittsburg.
Montee, Harry Earl; Pittsburg.
Morton, Evetta Rose; Pittsburg.
Nicholson, Mabel Marie; McCune.
Nicholson, Pearle E.; McCune.
Niles, John Claude; Liberal.
O'Dell, Bessie Belle; Opolis.
Oliver, Thos. Wm.; Pittsburg.
Ott, Mary Marcella; Pittsburg.
Parker, Ruby Mae; Liberty.
Patrick, Essie; Pittsburg.
Pence, Myrtle; Mulberry.
Plagens, Hertha; Pittsburg.
Poling, Viola; Pittsburg.
Pontius, Fleda Crystal; Erie.
Price, Dewey Herman; Pittsburg.
Rentie, Elvira Augusta; Great Bend.
Roe, Leroy; Pittsburg.
Saccanne, Della; Ringo.
Sare, Wilma Ava; Erie.
Schwab, John William; Pittsburg.
Scott, Elsie Mary; Weir.
Scott, Everett Ernest; Weir.
Sherwood, Mavolene E.; Pittsburg.
Smith, Edith Mae; Pittsburg.
Snyder, Mary Elva; Pittsburg.
Stahley, Edith Gladys; Mulberry.
Stillwaugh, Etta; Pittsburg.
Strasser, Fred; Hiattville.
Sullivan, Margaret Frances; Pittsburg.
Tanquary, Jean Esther; Girard.
Taylor, Dee Eva; Arcadia.
Taylor, Oliver Franklin; Galzier.
Thornton, Edith Alice; Sapulpa.
Vandervort, Claude Brien; Walnut.
Voeth, Clarise; Pittsburg.
Wallace, NeVella Jeanette; Pittsburg.
Weir, Bertie Thelma; Farlington.
Weir, Evanelia; Farlington.
Williams, Alta Leona; Chanute.
Williams, Wilma Margaret; Pittsburg.
Williamson, Elweard Tyre; Pittsburg.
Wilson, Ruby; Pittsburg.
Wiman, Euladell; Pittsburg.

HIGH SCHOOL SOPHOMORES.

Alumbaugh, Goldie Ruth; Pittsburg.
Attkisson, Alta S.; Hepler.
Austin, Lola May; Mulberry.
Barnes, Fred Franklin; Pittsburg.
Beecham, Frances Mayme; Kansas City.
Bigley, Loreen Phaye; Pittsburg.
Billington, Earnest Floyd; Pittsburg.
Blackett, Fay Ruth; Pittsburg.
Blake, Violet Edythe; Weir.
Brown, Nannie Virginia; Farlington.
Burkhart, William Henry; Pittsburg.
Carter, Cecil Wauda; Pittsburg.
Chamberlain, Lena Ruth; Pittsburg.
Chew, Anna Mae; Memphis.
Church, Ruth Martha; Pittsburg.
Clark, Floyd McKinley; Pittsburg.
Clemmens, Jack Ica; Pittsburg.
Cockerill, Almond; Pittsburg.
Collins, Mary; Pittsburg.
Cook, Juanita Beatrice; Pittsburg.
Cooke, Charlotte Elizabeth; Pittsburg.
Cornett, Virgie M.; Thayer.

HIGH SCHOOL SOPHOMORES—*continued.*

Dalton, Ruth Jane; Arcadia.
Daly, John Neblett; Cherryvale.
Daniel, George D.; Pittsburg.
Davis, Irma S.; Pittsburg.
Dobson, Edna Marie; Pittsburg.
Doty, Jack; Pittsburg.
Dougherty, Lloyd Forest; Pittsburg.
Elliott, Sadie Almeda; Columbus.
Evans, William Edward; Mulberry.
Friend, Anna Isabel; Chicopee.
Fromong, Olga; Pittsburg.
Fry, Byrle Beatrice; Asbury.
Fulkerson, Irma; Pittsburg.
Galli, Mary Ernestine; Breezy Hill.
Graves, Elenor Virginia; Asbury.
Gregory, Wm. Arthur; Pittsburg.
Hallenberg, Roscoe; Chanute.
Hamilton, Myrtle May; Mulberry.
Harpole, Frances; Opolis.
Harrison, Arthur George; Pittsburg.
Hazlewood, Vera Ethel; Crestline.
Hisle, James; Pittsburg.
Hopper, Eva Irena; Arcadia.
Housel, Mavis Victoria; Pittsburg.
Houston, Cecil D.; Lauton.
Huston, Ella Nadine; Pittsburg.
Huston, Robert L.; Pittsburg.
Israel, Constance Thelma; Farlington.
Jackson, Ruby A.; Pittsburg.
Janes, Hazel Lee; Farlington.
Jarrell, Bertha Louise; Pittsburg.
Jones, Samuel Oscar; Pittsburg.
Kelley, John Franklin; Fort Scott.
Killough, Elsie Louise; Pittsburg.
Keating, Helen M.; Fulton.
Kitterman, M. Ethel; Longton.
Klock, Warren; Farlington.
Lamborn, Sarah Gladys; Pittsburg.
Lewis, E. Marie; Opolis.
Lewis, Mary; Pittsburg.
Lewis, Victory John; Opolis.
McFerron, Ella Frances; Lawton.
Mahan, Edward; Chicopee.
Marsh, Edith Katherine; Pittsburg.
Mathes, Fern Cleone; Pittsburg.
Millard, Leo Chester; Pittsburg.
Mitchell, Thelma; Pittsburg.
Morrison, Nellie Blanche; Franklin.
Morton, Winnie Mae; Pittsburg.
Myers, Jewell Evangeline; Weir.
O'Dell, Clyde Herman; Asbury.
Oertle, Harve Watson; Pittsburg.
Oliver, Ella Thelma; *Joplin, Mo.*
Pearson, Kenneth Lloyd; Pittsburg.
Perdue, James Lester; Opolis.
Rickey, Lillian; Pittsburg.
Rondelli, John; Chicopee.
Roseberry, Edith Marie; St. Paul.
Roseboom, Florence; Girard.
Schneider, Jewell Mildred; Pittsburg.
Schoenhofer, Edward Joseph; St. Paul.
Schooley, Helen; Pittsburg.
Scott, Raymond; Weir.
Sipes, Garald A.; Pittsburg.
Sipes, Gladys; Pittsburg.
Smiley, Lydia Wilmoth; Pittsburg.
Smith, Wilbur Jesse; Pittsburg.
Snyder, Emma Kathleen; Pittsburg.
Stocking, Gladys Carlota; Pittsburg.
Sutton, Lillian Merrill; Weir.
Sylvester, Raleigh R.; Pittsburg.
Tanguary, Blendena; Independence.
Taylor, John Irvin; Pittsburg.
Taylor, Naomi; Glazier.
Tewell, Harold Royal; Pittsburg.
Thornton, Gracie Elva; Arcadia.
Viets, Clarence Frederick; Walnut.
Wagner, James Earl; Pittsburg.
Walters, Clyde E.; Arma.
Watson, Christena Judea; Weir.
Webber, Rozena Geavina; Pittsburg.
White, Birchie; Asbury.
White, Rachel Beatrice; Pittsburg.
Whitehead, Esther; Girard.
Widner, Irma Marie; Pittsburg.
Willard, Jennie Lourette; Arcadia.
Wilson, John Benjamin; Opolis.
Winter, Louis Frederick; Pittsburg.
Witter, Clyde; Asbury.
Wolleson, Dean Henry; Pittsburg.
Yager, Elizabeth Charlotte; Hiattville.

HIGH SCHOOL FRESHMEN.

Allen, Charlotte Elizabeth; Mulberry.
Allen, Pearl Mary; Independence.
Allen, Raymond Lawrence; Pittsburg.
Andrews, Harry Robert; Girard.
Andrew, Jack P.; Girard.
Attkisson, Olive J.; Hepler.
Bass, Clifford Phelps; Pittsburg.
Beasley, Cecil L.; Pittsburg.
Berkehiser, LaOrrell Pauline; Iola.
Brown, Mamie Luella; Pittsburg.
Bruce, Nelle Kytherine; Weir.
Burdette, Mildred; Pittsburg.
Cairns, Mary Anna; Chicopee.
Carl, Gladys Star; Arma.
Church, Edith Louise; Pittsburg.
Comstock, Walter Edward; Pittsburg.
Crelly, Harold Joseph; Pittsburg.
Crouch, Albert Emitt; Pittsburg.
Cummins, Nadine Marie; Pittsburg.
Daly, John Neblett; Cherryvale.
Demmon, Leroy Allen; Altoona.
Dial, Genneive; Pittsburg.
Edwards, Eva; Weir.
Eller, Frances Anna; Carona.
Emmons, Gertrude Emma; Pittsburg.
Ewalt, Theo; Pittsburg.
French, Emma Catherine; Nickerson.
Fritter, Chester Ward; Pittsburg.
Gillenwaters, Jennie Marie; Pittsburg.
Graham, Margaret; Chicopee.
Gray, Jane Sherwood; Weir.
Greef, Herman Fred; Pittsburg.
Gregg, Anna M.; Frankfort.
Hennigh, Lottie Laura; Pittsburg.
Hesson, Vera Gladys; Pittsburg.
Higgins, Ellen Josephine; Chicopee.
Huddleston, Vina; Garland.
Huston, Robert L.; Pittsburg.
Jackson, Nora Anna; Neodesha.
Janes, Sybl Lucile; Englevale.
Jones, Nina Helen; Pittsburg.
Justice, Mildred Claire; Chetopa.
Keck, Leo; Peru.
Koopman, Fred Louis; Pittsburg.
Lance, Mary Alice; Pittsburg.
Lavery, Joseph Edward; Frontenac.
Lawer, Harold DeRoy; Weir.
Little, Elsie Marie; Parsons.
McGinley, Annie Cecelia; Frontenac.
McKelvey, James Brooke; Pittsburg.
Martin, Phebe Aida Lee; Farlington.
Matter, Leeman Cecil; Weir.
Matthews, Frank Glen; Pittsburg.
Mattingly, Isabelle Marie; Pittsburg.
Mein, Alfred D.; Farlington.
Miller, Clarence E.; Pittsburg.
Nevins, Glenn D.; Pittsburg.
O'Dell, Jessie Mae; Opolis.
Oswold, Mary Mona; Crowbury.
Packard, Arthur Edwin; Pittsburg.

HIGH SCHOOL FRESHMEN—*continued.*

Patterson, Addie Mildred; Pittsburg.
Perkins, Carlyle Miller; Pittsburg.
Pickering, Hildred; Pittsburg.
Pierce, Mabel Lorene; Pittsburg.
Phoek, Marguerite; Pittsburg.
Poling, Hattie Marie; Pittsburg.
Radley, Mary Scranton; Weir.
Rankin, Connie Arvilla; Pittsburg.
Raper, Jessie Joy; La Harpe.
Reagan, Anna Laura; Redfield.
Robins, Leslie Church; Pittsburg.
Rogers, Jim; Pittsburg.
Rose, Marriam; Pittsburg.
Scheer, Daniel Henry; Foraker.
Scott, Verna Viola; Weir.
Severns, Effie Clare; Pittsburg.
Sherwood, James; Pittsburg.
Skelton, Dale; Pittsburg.
Skinner, Gladys Irne; Osage City.
Smith, Carrie; Neosho Falls.
Spence, Pauline Faye; Pittsburg.
Spradling, Agnes Cecelia; Pittsburg.
Sweeney, Ethel Isabel; Pittsburg.
Taylor, Naomi, *Glazier, Tex.*
Thorndson, Maxine Iraber; Farlington.
Van Houten, James Almont; Pittsburg.
Wagner, Naomi Fern; Pittsburg.
Wallace, John Thomas; Pittsburg.
Ware, Seth; Pittsburg.
Watson, Maggie Mae; Pittsburg.
White, Helen Templeton; Weir.
White, Mary Margaret; Pittsburg.
Wicker, Robert Windell; Pittsburg.
Williams, Ralph Raymond; Fort Scott.
Wilson, Gay L.; Opolis.
Wilson, Mable; Chicopee.
Wright, Pearl Roberta; Pittsburg.
Yates, Gladys Elizabeth; Pittsburg.
Young, Edna Josephine; Chicopee.
Young, Ester Rose; Pittsburg.

HIGH SCHOOL SPECIALS.

Ambrose, Sister Mary, Pittsburg.
Baysinger, Edith Elizabeth; Pittsburg.
Beachner, Arthur; St. Paul.
Bennett, Esther; Pittsburg.
Buckingham, Lee Helen; Weir.
Cleffman, Mary Magdalene; Englevale.
Crouch, Arch; Pittsburg.
Culbertson, Ethel A.; Hepler.
DeGasperi, Viola Genevieve; Pittsburg.
Forsythe, Dorothy; Frontenac.
Friskel, Anna Thressa; Frontenac.
Keating, Helen; Fulton.
Kesler, Edger Darius; Opolis.
Kilduff, James Leo; Chicopee.
King, Genora May; Pittsburg.
Koopman, William Martin; Pittsburg.
Martin, Edna Mae; Pittsburg.
Matthews, William Robert; La Harpe.
Morris, Gretchen Prime; Pittsburg.
Murray, Beulah Mae; Parsons.
Peak, Lourene Olive; Walnut.
Peters, Landon Ben; Pittsburg.
Phillips, Edith Mae; Mulberry.
Pitts, Jetta; La Harpe.
Rausenberg, Irene; Pittsburg.
Rufenacht, Emily; Ness City.
Salisbury, Bessie M.; Pittsburg.
Scepanske, Victor Alex; Franklin.
Shultz, Carrie Fleming; Longton.
Urban, Ora Marie; Grenola.
Wiley, Lucille; Girard.
Wilson, Lenora; Columbus.
Yates, Gladys; Pittsburg.

RURAL SPECIALS.

Ashley, Helen Dorothy; Girard.
Bass, Mrs. Alice; Farlington.
Beachner, Beatrice Mary; St. Paul.
Burns, Isabel; Arma.
Byrnes, Margaret Gertrude; Moline.
Camblin, Gail; McCune.
Cameron, Blanche; Oswego.
Cameron, Florence Alta; Oswego.
Carbaugh, Vessie Virginia; Pittsburg.
Cochran, Eva Celia; Mulberry.
Davis, Mabel Mary; Mulberry.
Endicott, Lucy Margaret; Gross.
Epler, Florence Mildred; Parsons.
Evans, Elsie Inez; Pittsburg.
Fitzgerald, Grace Alma; Walnut.
Fowler, Emma; Arcadia.
Halliday, Mary Jane; Mulberry.
Harrell, Mata A.; Pleasanton.
Henderson, Stella R.; Pleasanton.
Huddleston, Ethel Glenn; Arcadia.
Ingram, Edna Myrtle; Arcadia.
Isom, Hazel Trinnie; Uniontown.
Isom, Florence Viola; Uniontown.
Johnston, Vida Lorrene; Arcadia.
Kohler, Cora Alma; Pittsburg.
Lee, Mrs. Eleanor L.; Parsons.
Mahan, Alice LuVerne; Pittsburg.
Oldham, Ethel Violet; Arcadia.
Peak, Alice Elizabeth; Walnut.
Reagan, Anna Laura; Redfield.
Reinhart, Mabel; Mulberry.
Riordan, Teresa Ellen; Pittsburg.
Roseberry, Edith Marie; St. Paul.
Sacanne, Della; Ringo.
Samp, Ella May; McCune.
Scott, Mary Katherine; McCune.
Scribner, Doris Daisy; Chanute.
Scribner, Edna; Chanute.
Shook, Vernoica Margaret; Walnut.
Sullivan, Ophia; Weir.
Torbett, Elizabeth Veronica; Arma.
Wasem, Freda; Girard.
Wasem, Ethel Philippina; Girard.

MODEL SCHOOL.

Ala, Frank; Chicopee.
Ala, Geno; Chicopee.
Albertson, Katie; Pittsburg.
Alexander, William; Pittsburg.
Allen, George; Pittsburg.
Allen, Helen; Pittsburg.
Andres, Elma; Pittsburg.
Andros, Elmer; Pittsburg.
Arthur, Samuel; Pittsburg.
Ash, Charles; Pittsburg.
Bailey, Axton; Pittsburg.
Baime, John; Dunkirk.
Baker, John; Pittsburg.
Bank, Tony; Chicopee.
Barker, Edwin; Pittsburg.
Baroni, Rollie; Pittsburg.
Baker, Emeric; Pittsburg.
Baxter, Georgette; Pittsburg.
Baxter, Louise; Pittsburg.
Beasley, Lynette Elizabeth; Pittsburg.

MODEL SCHOOL—*continued.*

Bell, Joe; Chicopee.
Bennett, Clelia; Pittsburg.
Benton, Robert; Pittsburg.
Bishop, Darrell; Pittsburg.
Bishop, Lola; Pittsburg.
Bishop, Viva; Pittsburg.
Bitner, Arthur; Pittsburg.
Bitner, Robert; Pittsburg.
Blacket, Carl; Pittsburg.
Block, Bethadee; Pittsburg.
Black, John; Pittsburg.
Boime, Maggie; Pittsburg.
Borannie, Maxine; Frontenac.
Bowen, James; Pittsburg.
Brandenburg, Helen; Pittsburg.
Brandenburg, William; Pittsburg.
Branham, Blair; Pittsburg.
Branham, Sarah; Pittsburg.
Brazleton, Albert; Pittsburg.
Briggs, Freeda; Pittsburg.
Briggs, Hoyt; Pittsburg.
Briggs, Ruth; Pittsburg.
Briggs, Xuanita; Pittsburg.
Brower, Esther; Pittsburg.
Brown, George; Pittsburg.
Benney, Helen; Chicopee.
Bureau, Elsie; Pittsburg.
Burnett, Shirley; Pittsburg.
Caffey, Elizabeth; Pittsburg.
Callery, Annabel; Pittsburg.
Carlton, Harold; Pittsburg.
Carlton, Irma; Pittsburg.
Carlyon, LeMoine; Pittsburg.
Carter, Beatrice; Pittsburg.
Carter, Bernice; Pittsburg.
Caskey, Virginia; Pittsburg.
Chambliss, Marion; Pittsburg.
Church, Grace; Pittsburg.
Clark, George; Pittsburg.
Coulter, Chester; Pittsburg.
Coulter, Allen; Pittsburg.
Covell, Carl; Pittsburg.
Crelly, Carl; Pittsburg.
Crelly, Margaret; Pittsburg.
Cropper, Agnes; Pittsburg.
Cropper, Thelma; Pittsburg.
Dallabetta, Tony; Chicopee.
Danner, Edwin; Pittsburg.
Davis, John; Pittsburg.
Dellinger, Alice; Pittsburg.
Dellinger, Ruth; Pittsburg.
DeRuy, Norville; Pittsburg.
Devaney, Opal; Pittsburg.
Dickey, Helen; Pittsburg.
Dickey, Maurine; Pittsburg.
Dobson, Maurine; Pittsburg.
Drake, Alvin; Chicopee.
Druart, Arthur; Frontenac.
Dudgeon, Morris; Pittsburg.
Eason, Mildred; Pittsburg.
Evans, Ellen; Pittsburg.
Fatham, Glenn; Pittsburg.
Favoni, Ricci; Chicopee.
Flynn, Francis; Chicopee.
Forester, Samuel; Pittsburg.
Foster, Genevieve; Frontenac.
French, Huston; Pittsburg.
French, Mary; Pittsburg.
Fritts, Maggie; Mulberry.
Fuhrer, Mary; Pittsburg.
Geddis, Josephine; Pittsburg.
Geary, May; Pittsburg.
Gendusa, Joe; Pittsburg.
Gieselman, Eunice; Pittsburg.
Gieselman, Frances; Pittsburg.
Givens, Harrison; Pittsburg.
Givens, William.
Graham, Corabelle; Pittsburg.
Graham, Dorothy; Pittsburg.
Greggs, Elmer; Pittsburg.
Gregory, Glenn; Pittsburg.
Gregory, Wayland; Pittsburg.
Hazelwood, Minnie; Pittsburg.
Higgins, Cathyrn; Chicopee.
Hobson, Marcet; Pittsburg.
Hobson, Ruth; Pittsburg.
Horton, Mildred; Pittsburg.
Hoover, Eva Wilburton; Pittsburg.
Hostutler, Hoyt; Pittsburg.
Hughey, Mabel; Pittsburg.
Hughey, Melvin; Pittsburg.
Jackson, Alda Mae; Pittsburg.
Jackson, Merle; Pittsburg.
Jennings, Dural; Pittsburg.
Jennings, George; Pittsburg.
Jennings, Lenore; Pittsburg.
Jones, Emery; Chicopee.
Jones, Ollie; Pittsburg.
Jones, Paul; Pittsburg.
Jones, Thelma; Pittsburg.
Jones, Pauline; Pittsburg.
Jones, Lloyd; Pittsburg.
Jones, Raymond; Pittsburg.
Jones, Ruth; Pittsburg.
Kincaid, Hugh; Pittsburg.
Kuentzel, Justine; Pittsburg.
LaRue, Wilma; Pittsburg.
Liepman, Margaret; Pittsburg.
Lemmon, Lydia; Pittsburg.
Lowe, Donald; Pittsburg.
Lucas, Edna; Pittsburg.
Lucas, Mildred; Pittsburg.
Lucas, William; Pittsburg.
Mackie, Willie; Pittsburg.
Managrum, Margaret; Pittsburg.
Markle, Fergus; Pittsburg.
Markle, Loyd; Pittsburg.
Marsh, Elizabeth; Pittsburg.
Marsh, Flora Jeannette; Pittsburg.
Marsh, Patty; Pittsburg.
Marsh, Richard; Pittsburg.
Martinous, Carl; Pittsburg.
Martinous, William; Pittsburg.
Mattingly, Edwin.
McDonald, Mary Katherine; Pittsburg.
McDonald, Robert; Pittsburg.
McNally, Mary Odell; Pittsburg.
MeNeil, John; Pittsburg.
McNeil, Margaret; Pittsburg.
Mead, Lorene; Pittsburg.
Mead, Ralph; Pittsburg.
Meehan, Leo; Chicopee.
Melette, Laura Margaret; Pittsburg.
Mercier, Alfred; Pittsburg.
Millard, Jesse; Pittsburg.
Millard, Lucille; Pittsburg.
Millard, Raymond; Pittsburg.
Moberg, Jack; Pittsburg.
Moore, Maurine; Pittsburg.
More, Nadine; Pittsburg.
More, Opal; Pittsburg.
Narramore, Harry; Pittsburg.
Narramore, Reginald; Pittsburg.
Nevins, Clark; Pittsburg.
Nightingale, Albert; Pittsburg.
Oiry, Marguerite; Pittsburg.
Olivette, Jim; Chicopee.
Olivette, Tony; Chicopee.
Olsen, Lucia; Pittsburg.
Orlandini, Maggie; Pittsburg.
Ortaldo, Tracy; Pittsburg.
Patton, M. B.; Frontenac.
Patton, Irma; Frontenac.
Pease, Daniel; Pittsburg.
Perkins, Marlin; Pittsburg.
Pritchett, Robert; Pittsburg.
Ramsey, Robert; Pittsburg.
Reasoe, Charles; Pittsburg.
Reasoe, Glenn; Pittsburg.

MODEL SCHOOL—*continued.*

Richards, Nina; Pittsburg.
Riley, Nadine; Pittsburg.
Robbins, Merle; Pittsburg.
Rogers, Fred; Pittsburg.
Rogers, Martha; Pittsburg.
Rondelli, Barney; Chicopee.
Rondelli, Franklin; Chicopee.
Russell, George; Pittsburg.
Rynerson, Elden; Pittsburg.
Salsman, Byrl; Pittsburg.
Sargeant, Richard; Pittsburg.
Scalet, Angelo; Pittsburg.
Schieb, Lillian; Pittsburg.
Schirmer, Frank; Chicopee.
Schmuck, Lynn; Pittsburg.
Schwab, Charles; Pittsburg.
Scott, Arthur; Pittsburg.
Scott, Bob; Pittsburg.
Scott, Eloise; Pittsburg.
Seeley, James; Pittsburg.
Seeley, Warren; Pittsburg.
Shafer, Dorothy; Pittsburg.
Shafer, Robert; Pittsburg.
Shaw, Ellen; Pittsburg.
Shaw, James; Pittsburg.
Sheets, Velma; Pittsburg.
Sherwood, Edna; Pittsburg.
Sighel, Tracy; Pittsburg.
Simpson, Arthur; Pittsburg.
Simpson, Gail; Pittsburg.
Smith, Sydney; Pittsburg.
Smith, Cecile; Pittsburg.
Snyder, Kenneth; Pittsburg.
Sparks, Helen; Pittsburg.
Sparks, Jack; Pittsburg.
Sparks, Merle; Pittsburg.
Sparks, Marguerite; Pittsburg.
Spencer, Kenneth; Pittsburg.
Steffins, Charles; Pittsburg.
Stephens, Alfred; Pittsburg.
Stevens, Sterling, Pittsburg.
Stevens, William; Pittsburg.
Stumfall, Anna; Pittsburg.
Sturn, John; Pittsburg.
Sunderland, Gail; Pittsburg.
Sylvester, Jennie; Pittsburg.
Sylvester, Ralph; Pittsburg.
Tanner, Lorene; Pittsburg.
Taylor, Katherine; Pittsburg.
Taylor, Mary Elizabeth; Pittsburg.
Tevis, Susie; Pittsburg.
Thesing, John; Pittsburg.
Thrutchley, Vivian; Frontenac.
Trice, Katherine; Pittsburg.
Trout, Harold; Pittsburg.
Trout, Gilbert; Pittsburg.
Trout, Mary; Pittsburg.
Trout, Ralph; Pittsburg.
Tuvigliatto, Tom; Frontenac.
Tynai, Charles; Pittsburg.
Uhles, Elsie; Pittsburg.
Updegrove, James; Pittsburg.
Vedil, Adele; Pittsburg.
Vessadini, Philip; Pittsburg.
Vivian, Harold; Pittsburg.
Walker, Merle; Pittsburg.
Walters, Clarence; Pittsburg.
Walters, Elsie; Pittsburg.
Walters, Florence; Pittsburg.
Ware, Miles; Pittsburg.
Waskey, Dean; Pittsburg.
Waskey, Helen; Pittsburg.
Watson, Andrea; Pittsburg.
Watson, Fay; Pittsburg.
Watson, Harvey; Pittsburg.
Watson, Myrtle; Pittsburg.
Webb, Edwin; Pittsburg.
Webb, May; Pittsburg.
Webb, Paul; Pittsburg.
Webb, Philip; Pittsburg.
Wheeler, Fred J.; Pittsburg.
Whitesett, Ermol; Pittsburg.
Williams, Helena; Peru.
Williams, Jessie; Pittsburg.
Wood, James; Pittsburg.
Wood, Margaret; Pittsburg.
Yleischaker, Arnold; Pittsburg.
Young, May; Pittsburg.
Young, Ruth; Pittsburg.
Zickgraf, Louis; Pittsburg.

KINDERGARTEN.

Axton, Bailey; Pittsburg.
Bailey, Anne; Pittsburg.
Barnes, Gail; Pittsburg.
Baroni, Lurene; Pittsburg.
Beasley, Lynette; Pittsburg.
Beasley, Warren; Pittsburg.
Bell, Irene; Pittsburg.
Bickel, Louis; Pittsburg.
Birch, Emmet; Pittsburg.
Block, Berthada; Pittsburg.
Branham, Sarah; Pittsburg.
Burnett, Shirley; Pittsburg.
Caskey, Virginia; Pittsburg.
Clemens, Calvin; Pittsburg.
Colellemo, John; Pittsburg.
Colellemo, Mercedes; Pittsburg.
Coulter, Chester; Pittsburg.
Cunningham, Freda; Pittsburg.
Davis, Franklin Otto; Pittsburg.
Degan, Marjory Reba; Pittsburg.
Dellinger, Mary Catherine; Pittsburg.
Dickey, Helen; Pittsburg.
Donaho, Helen; Pittsburg.
Evans, Anna; Pittsburg.
Gaddis, Josephine; Pittsburg.
Givens, Betty; Pittsburg.
Hempel, Mary; Pittsburg.
Hobson, Robert; Pittsburg.
Hobson, Wilma; Pittsburg.
Jones, Paul; Pittsburg.
Jones, Thelma; Pittsburg.
Markle, Fergus; Pittsburg.
Mondragon, Margaret; Pittsburg.
Millard, Raymond; Pittsburg.
Milleson, Dana R.; Pittsburg.
Moffat, George Snow; Pittsburg.
Morey, Maurine; Pittsburg.
Nesch, Betty; Pittsburg.
Oiu, Marguerite; Pittsburg.
Phillips, Katherine; Pittsburg.
Pryor, Henry; Pittsburg.
Ransall, Esther; Pittsburg.
Robertson, Myrl; Pittsburg.
Roby, Darlene; Pittsburg.
Sanders, Marjory; Pittsburg.
Scott, Arthur; Pittsburg.
Scott, Bob; Pittsburg.
Sheib, Lillina; Pittsburg.
Shirk, Gevene; Pittsburg.
Siegraf, Louis; Pittsburg.
Smart, Lois; Pittsburg.
Sparks, Edna; Pittsburg.
Sweeney, Charles; Pittsburg.
Tanner, Lorine; Pittsburg.
Thesing, John; Pittsburg.
Wadley, Waldo; Pittsburg.
Watson, Fay; Pittsburg.
Wheeler, Philip; Pittsburg.
Whitesitt, Robert; Pittsburg.
Wisdom, Mildred; Pittsburg.
Wood, Dorothe; Pittsburg.
Wood, Virginia; Pittsburg.
Yartz, Albert; Pittsburg.

EXTENSION STUDENTS.

Abston, Gladys; Coffeyville.
Adamson, Virginia May; Erie.
Alexander, Gertrude M.; Pittsburg.
Alexander, LaVon B.; Pittsburg.
Allison, Elsie; Parsons.
Allen, Margaret; Iola.
Allen, Minnie Bowen; Iola.
Allen, Pearl M.; Independence.
Angell, Grace Ruby; Independence.
Applebaugh, Frank Pittenger; Cherryvale.
Armstrong, S. Leo; Columbus.
Bailey, Julia Blanche; Parsons.
Baker, Florence Hedges; Galena.
Baker, Gertrude V.; Coffeyville.
Ball, Jessie Mildred; Independence.
Barber, Caroline Elizabeth; Coffeyville.
Barber, Ethel Martha; Cherryvale.
Barnes, Myrtle Elizabeth; Pleasanton.
Barr, Mary Della; Cherryvale.
Barrick, Grace M.; Edna.
Bass, Wm. Woodford; Pittsburg.
Baxter, Mrs. L. W.; Columbus.
Baum, Thresa; Galena.
Baugher, Vida Estella; McCune.
Baum, Stella Haines; Galena.
Baxter, Ernest; Parsons.
Bayne, Rhoda; Galena.
Beamer, Rhoda May; Parsons.
Beecher, Maggie; Arkansas City.
Belding, Florence Kent; Pleasanton.
Bennett, Grace Margaret; Scammon.
Bentley, Margaret Stiles; Coffeyville.
Bergman, Esther Eleanora; Scammon.
Birge, Mamie Millicent; Chetopa.
Bixler, Beulah; Chanute.
Black, Erma E.; Wichita.
Black, LaRue; Wichita.
Bloomfield, Bertha Elizabeth; Winfield.
Blunk, Willis Maude; Galena.
Bodelle, Effie Matilda; Osage City.
Bodle, Portia Johnston; Chanute.
Boerstler, Bessie M.; Chanute.
Bonter, Albert; Caney.
Boss, Marcellus G.; Columbus.
Bowling, Albert; Caney.
Boyd, Beth E.; Parsons.
Boyd, Nell; Parsons.
Bradburg, Consuelo Florence; Valeda.
Bradley, Opaline Laoma; Parsons.
Bramlette, Hattie Lorena; Hiattville.
Brennan, Maomi Maria; West Mineral.
Brouk, James Anton; Wilson.
Branson, Elsie Edith; Scammon.
Brayfield, Clarence Arthur; Peru.
Bridger, Eula; Parsons.
Brighton, Marie; Independence.
Broadlick, John; Pittsburg.
Brooks, M. L.; Columbus.
Brougher, Ora Irene; Cherryvale.
Brown, Anna Rebecca; Pittsburg.
Brown, Georgia Thornton; Independence.
Brown, Nannie Virginia; Farlington.
Bryon, Essie Lee; Coffeyville.
Buck, Pearl Jennie; Arkansas City.
Buckles, Lela Lois; Peru.
Buesch, Mary Z.; Pittsburg.
Burg, Edyth; Parsons.
Burke, Marjorie Gladness; Independence.
Burnett, Bryan S.; La Cygne.
Burr, Betty; Galena.
Butcher, Alta; Galena.
Butler, Edna Faye; Coffeyville.
Butler, James Clay; Coffeyville.
Campbell, Anna; Arma.
Capps, Daphna Jule; Arcadia.
Carlson, Dorothy; Pittsburg.
Carter, Thomas Wilborn; Columbus.
Carnagey, Thelma Josephine; La Cygne.
Carpenter, Florence R.; Girard.
Carroll, Bessie May; La Cygne.
Case, George W.; Columbus.
Cash, Dora; Independence.
Cates, Ada; Independence.
Catlett, Merton L.; Columbus.
Chambers, Millie Belle; Dearing.
Cherry, Mrs. Nevada; Parsons.
Childers, Hazel B.; Arkansas City.
Childers, Loyd D.; Columbus.
Cleffman, Leona Emily; Mulberry.
Clodfelter, Susan Jane; Iola.
Clover, Hester Ann; Chanute.
Collins, Flora; Scammon.
Comer, Flossie; Mulberry.
Condra, Minnie Ann; Coffeyville.
Condra, Theo Lee; Coffeyville.
Conover, Sadie; Pleasanton.
Cook, Lois Lillian; Prescott.
Coonrod, Nathan Hutchins; Arcadia.
Cordry, Ida A.; Parsons.
Courtney, Drusilla Elinor; Independence.
Courtney, Margaret; Fort Scott.
Crawford, Helen Darling; Winfield.
Cummings, Dewey Victor; Erie.
Curl, Elsie Mae; Edna.
Dale, Henry C.; Columbus.
Davis, Vinnie; Pittsburg.
Deal, Lulu Denham; West Mineral.
Dennis, Clement V.; Independence.
Denney, Nannie B.; Independence.
Dewhirst, Mabel Nora; Farlington.
Dewhirst, Nina Elaie; Farlington.
Dietrich, Susie Agnes; Mulberry.
Ditson, Jessie Anna; Galena.
Dodds, Ida Elizabeth; Carlyle.
Duer, Myrtle; Sylvia.
Dunaway, Edith; Galena.
Dunbar, Martha; Weir.
Ellis, Ellen Julia; Cherryvale.
Ellis, Lucile; Columbus.
Endicott, Helen; Gross.
Epling, Eva; Beulah.
Evans, Mozella Gladys; Independence.
Farrimond, Edna Holt; West Mineral.
Farris, Oscar R.; Eureka.
Ferguson, Mrs. J. O.; Independence.
Ferguson, Nelle; Parsons.
Fern, Josephine; Scammon.
Fern, Rose; Scammon.
Ferrell, Lura; LeHunt.
Ferrell, Mary Jane; Independence.
Field, Frederick Millard; Galena.
Fields, Lillian Melvin; Iola.
Filson, Hazel Mae; Chanute.
Fletcher, Aura Adeline; Pleasanton.
Flora, Myrtle Sarah; Erie.
Flora, Vivian; Erie.
Fowler, Esther; Mulberry.
Friely, Walter Louis; Independence.
Ferguson, Mary Ellen; West Mineral.
Gallagher, Grace; Pittsburg.
Galpine, Nellie; Parsons.
Garrison, Josephine May; Eureka.
Garvin, A. E.; Erie.
Gibson, Pauline Marguerite; Osage City.
Gemmell, George; Cherokee.
Gillet, Bessie G.; Coffeyville.
Gilmore, Viola Belle; Chetopa.
Gladieaux, Tiva; Weir.
Gordon, Martha Gertrude; Eureka.
Gough, William; Chanute.
Graham, Gladys Emma; Columbus.
Grant, Clara Loretto; West Mineral.
Grant, Sarah Agatha; Scammon.
Gray, Irwin David; Edna.
Grayson, Muriel; La Cygne.
Green, Mary Edith; Pittsburg.
Grimes, Edna Leona; Arcadia.

EXTENSION STUDENTS—*continued.*

Glucklick, Sadie; La Cygne.
Haggard, Alta; Oswego.
Halsey, Edna May; Coffeyville.
Haman, Pearl; Parsons.
Hamilton, Jay V.; Chanute.
Hammer, Beryl Annette; Scammon.
Hammond, Forrest Fern; Mulberry.
Haner, Merritt Edwin; Galena.
Harmon, Laura Elizabeth; Englevale.
Harney, Zenna Florence; Independence.
Harris, L. D.; Edgerton.
Harvey, Myrtle; McCune.
Hays, Martha; Pleasanton.
Hedges, Mildred; Galena.
Henry, Stella Fay; Independence.
Hickman, Byrl Beebe; Columbus.
Higgins, Ella Brimer; Pittsburg.
Hinkley, Orpha Ruth; Stark.
Hitchcock, Adeline Chambers; Columbus.
Hitchcock, Earl Wilkie; Columbus.
Hodgson, Owen Emery; La Cygne.
Hoffman, Mary Ely; Eureka.
Hood, Florence; Winfield.
Horner, Katherine; Edna.
Hover, Margaret R.; Eureka.
Hudson, Helen Adele; Fort Scott.
Hudson, Jewel; Coffeyville.
Huff, Sabra; Savonburg.
Huffman, Mrs. Minerva; Columbus.
Huff, Neal Erwin; Fort Scott.
Huff, Olive Ruama; Galena.
Hughes, Anna Elizabeth, Fort Scott.
Hughes, Elva Frances; Independence.
Hunter, Mary; Cherryvale.
Hunter, Nina Florence; Iola.
Hutchinson, J. L.; Pittsburg.
Ireland, Anita L.; Weir.
Jackson, Leila Ruth; Caney.
Jarrett, Leah Helen; Galena.
Jelf, Vira Victoria; Chautauqua.
Jefferson, Jennie; Independence.
Jenkins, Evelyn; Scammon.
Johnson, Mrs. Gertrude; Severy.
Johnston, Nellie; Peru.
Jones, Blanche Elma; Frontenac.
Jones, Clella; Independence.
Jones, Frank N.; Columbus.
Jones, Clair Lyman; Columbus.
Jones, Iona Elvira; Pittsburg.
Jones, Mary Alice; Coffeyville.
Kearns, Anna Wilburn; Winfield.
Kelly, Joseph Hallard; Pittsburg.
Kelly, Peter A.; Pittsburg.
Kelley, Verna Irene; Pittsburg.
Kemp, Mrs. Ardie Bee; Iola.
Kenny, Rose May; Chanute.
Kenworthy, Ruth M.; Columbus.
Kilger, Kathern; Weir.
King, Julia B.; Winfield.
King, Laurie; Iola.
King, William Franklin; Weir.
Kleffman, Arthur; Columbus.
Knott, Lillie Catherine; Edna.
Lacock, Minnie R.; Columbus.
Langford, Lena Marie; La Cygne.
La Rue, Logan D.; Columbus.
Lasey, L. E.; Independence.
Leach, John Franklin; Pittsburg.
Leonard, Ruby Odell; Galena.
Lewellen, Fae; Chetopa.
Ligon, Ethel Bell; Pittsburg.
Link, Ada Jane; Roseland.
Locke, Lloyd Burns; Erie.
Lock, Pearl Sharpe; Arkansas City.
Loebel, Elsie Selma; Independence.
Lomax, Mary Elsie; Independence.
Long, Rolla Edwin; Galena.
Loop, Charley Estol; Englevale.
Love, Bessie M.; Wellsville.
Lundine, Rose C.; Chanute.
Lydick, Julia Edith; Arkansas City.
McBride, Emma Ivan; Edna.
McCall, George Ernest; Cherryvale.
McCarthy, Mary; Parsons.
McCarty, Effie; Parsons.
McCarty, Hazel Catherine; Coffeyville.
McCarty, Margaret Marion; Coffeyville.
McCaul, Emma Dean; Independence.
McCaul, Eva May; Elk City.
McCaul, Lloyd Cook; Elk City.
McClure, Vera Catheline; Columbus.
McCormick, Grace; Scammon.
McCurry, Leona Bell; Peru.
McDowell, Sadie Louise; La Cygne.
McFerrin, Mary Grace; Independence.
McKay, Agnes Elizabeth; Independence.
McLean, Margaret; Fort Scott.
McMahan, Alice Mary; Parsons.
McNeill, Mrs. N. J.; Columbus.
McPherson, Lula; Chetopa.
Maguire, Corinne Frances; Coffeyville.
Maukinney, Hugh Franklin; Columbus.
Marchbanks, Eva; Scammon.
Masera, George; West Mineral.
Marlow, Gladys Mae; Peru.
Martin, Ada Pearl; Chanute.
Martin, Goldie Pearl; Arcadia.
Martin, Mary Beryl; Chanute.
Martin, Myrtle Ditson; Galena.
Martin, Mrs. M. R.; Chanute.
Massa, Cora Blanch; Edna.
Massa, Minnie May; Edna.
Masterson, Columbia; Fort Scott.
Mathias, Fred; Caney.
Mathews, Bertha May; Chanute.
Mathews, Dorothy Maud; Chanute.
Matson, Charles Elliott; Pittsburg.
Maudlin, Della R.; La Harpe.
Mayer, Grace C.; Peru.
Medley, James William; Chautauqua.
Melendy, William Clark; Savonburg.
Mellors, Martha; Mulberry.
Mellors, Mary; Weir.
Mills, Rosa M.; Eureka.
Mendenhall, Carrie; Winfield.
Miller, Frances; Independence.
Miller, R. F.; Parsons.
Milner, Lois; Parsons.
Mitchell, Claire Winifred; Geuda Springs.
Mitchell, Lawrence T.; Erie.
Moore, Ketura T.; Parsons.
Moore, Laura Dwelle; Chanute.
Moore, Mattie; Parsons.
Morgan, Edith Anne; Girard.
Morgan, Louise Dollie; Chetopa.
Morris, Amanda Olivia; Osage City.
Morrison, Frances A.; Coffeyville.
Morrison, Nellie Blanche; Franklin.
Mortimer, Florence Pearl; Cherryvale.
Mullen, Ruth; Eureka.
Murray, Janet Mackee; Scammon.
Nation, Odella; Pittsburg.
Naylor, Annabel Biddle; Winfield.
Needham, Russell Philetus; Arcadia.
Needham, Sadie Catharine; Arcadia.
Neely, Mary Isabel; Pomona.
Nelson, Beulah Grattan; Hutchinson.
Newell, Mary Jane; Erie.
Nicholson, Pearl T.; Winfield.
Nielsen, George Henry; Weir.
Noland, Harold Roy; Galena.
Norton, Helen G.; Chanute.
Oberwortmann, Nugent R.; Chetopa.
Oliphant, Mertha Mae; Chanute.
Oliphant, Bess; Columbus.
Osgood, Helen Pierson; Parsons.
Palmer, Dr. J. A.; Erie.
Paterson, Elizabeth; Chanute.
Patterson, Harry J.; Cherryvale.
Patterson, Lois Leona; Independence.
Peerman, Nina; Galena.

EXTENSION STUDENTS—*continued.*

Peeples, Mrs. Rose S.; Pittsburg.
Perkins, Gertrude; Olathe.
Perkins, Lillian Adelide; Moran.
Perkins, Ruth Elizabeth; Galena.
Perry, Aria Estelle; Independence.
Perry, Bertha; Parsons.
Phelps, Arthur Oliver; Bartlett.
Pitt, Viola Belle; Elgin.
Pittenger, Leah Leone; Cherryvale.
Pittenger, Nellie Marie; Independence.
Pittser, Ollie Fletcher; Erie.
Porter, John Albert; Columbus.
Provorse, Belle; Independence.
Pyle, Leo D.; Farlington.
Random, Edith; Eureka.
Record, Grace May; Thayer.
Reno, Grace Isabel; Iola.
Reynolds, Blanche Mildred.
Riggs, Arley; Independence.
Riley, Homer Wessley; Pittsburg.
Roberts, Alta; Girard.
Roberts, Irene Sinclair; Galena.
Roberts, Opal; Erie.
Roseboom, Martha Priscilla; Girard.
Ross, Randal; Pittsburg.
Rucker, Gladys May; Edna.
Rude, Hallie Frances; Edna.
Rummery, Clarence Elmer; Columbus.
Rummel, Mabel Ella; Baxter Springs.
Sanders, George Alfred; Scammon.
Sanford, Telia; Pittsburg.
Sanford, Martha M.; Pittsburg.
Savage, Mabel; Liberty.
Schellack, Mrs. Bessie; Galena.
Schmidt, Elizabeth; Oswego.
Schwartz, Esther Caroline; Galena.
Schoenhafer, Edward J.; Mulberry.
Scott, Florence; Parsons.
Scott, Hazel; Fort Scott.
Sharpnack, Leola M.; Columbus.
Sheads, Anna Margaret; Fort Scott.
Sheads, Lilly Merle; Arcadia.
Shellhorn, Claude Garvin; Erie.
Shellhorn, Nina Josephine; Erie.
Shinn, Ethel Lena; Chetopa.
Shirley, Sophia M.; Osage City.
Shockey, Beulah Fern; Iola.
Shultz, Nellie; Eureka.
Silvernail, Cora L.; Columbus.
Skinner, Bess; Pittsburg.
Slater, Irma; Pleasanton.
Slater, Maud; Pleasanton.
Slocum, May; Independence.
Smith, Anna M.; Columbus.
Smith, Eva Valrie; Parsons.
Smith, Beulah Alice; Galena.
Smith, Edna Margaret; Galena.
Smith, Lena Martin; Pittsburg.
Smith, Emma Pearl; Galena.
Smith, J. G.; Deering.
Smith, Lura Elizabeth; Farlington.
Smith, Mary Alpha; Chanute.
Smith, Nora Edith; Parsons.
Smith, Ruth M.; Chanute.
Smither, Riba Elizabeth; Pittsburg.
Snead, Gertrude; Edna.
Snider, Mosse; Mound City.
Snyder, William David; Columbus.
Spoonamore, Fannie; Coffeyville.
Stabler, Lucie L.; Peru.
Stallard, Clara Malissa; Caney.
Starchech, Grace Marion; Mulberry.
Stevens, Maude Frances; Eureka.
Stilwell, Helen Irene; Eureka.
Stine, Ella; Caney.
Stonecipher, Ernest E.; Columbus.
Stoughton, Ralph; Sherwin.
Strain, Ethel Anna; Osage.
Studkey, Edith Ethel; Coffeyville.
Swartz, Gladys Elnora; Chanute.
Tanner, Mabel Elma; Cherryvale.
Taylor, Pearl Etta; Independence.
Tedlock, Eva; Columbus.
Thomas, Margaret; Osage City.
Thrall, Mrs. Clara E. Harris; Eureka.
Throndson, Vivian Nea; Farlington.
Tourtelot, Mrs. G. E.; Chitwood.
Townsend, Susie Ellen; Girard.
Turrill, Coral Mary; Weir.
Turrill, Georgia Anna; Weir.
Tyson, Pearl May; Oswego.
Underhill, Nettie B.; Independence.
Vandyne, Mary Myrtle; Independence.
Vaughn, Grace; Pittsburg.
Vawter, Fern G.; Coffeyville.
Vawter, Ruth E.; Coffeyville.
Vest, Lucy Gertrude; Galena.
Wahl, Ethel Mary; Havana.
Wahl, Ethel Mary; Independence.
Walker, Pearl Frances; Farlington.
Watts, Clara Ellen; Chetopa.
Weir, Eva; Farlington.
Weith, Ida May; Iola.
Welch, Bess; Edna.
Welch, Iva Bell; Arma.
White, Alice Irene; Mulberry.
White, Anna; Weir.
Whitehead, Cora; Girard.
Whitman, Bee; Osage City.
Whitmore, Lena Flo; Weir.
Whittaker, Warren Green; Coffeyville.
Whitten, Mae; Pleasanton.
Wiggins, R. Bess; Eureka.
Wilks, Cecile Gertrude; Galena.
Williams, Ethel Laura; Arma.
Williamson, Mrs. Mary; Arma.
Willis, Wm. Roy; Parsons.
Wilson, Zora; Winfield.
Wing, Harry Raymond; Columbus.
Wilf, Ollie Alice; Coffeyville.
Woodard, Grace Mabel; Mineral.
Woolley, Lottie; Girard.
Wright, Gertrude; Weir.
Young, Hattie E.; Galena.
Young, Winnie Malhorn; Pleasanton.
Youngroot, Bertha M.; Osage City.
Zerby, Henry A.; Columbus.

CORRESPONDENCE.

Arnett, L. Pearl; Holton.
Briley, Carl; Jefferson.
Brooks, Howard A.; Fall River.
Bryce, Jessie Jones; Topeka.
Butcher, Avis; Garnett.
Carl, Hazel; Prescott.
Cleavinger, Hattie; Leavenworth.
Cochran, Mabel; Glasgow.
Dennis, Earl Azar; Havana.
Dickerson, Mabel; Springfield, Mo.
Drenner, Robert S.; Mound Valley.
Elliff, A. C.; *Prosperity, Mo.*
Glasscock, Edith H.; Moline.
Green, Isa A.; Kansas City.
Haffa, Milton Clarence; Abilene.
Hibbs, R. R.; Olathe.
Hobbs, Grace Mae; *Blue Jacket, Okla.*
Hunter, Mary; Cherryvale.
Hunts, Maude; McCune.
Johnson, Perry F.; *Houston, Tex.*
Little, J. M.; Geneseo.
McCall, George Ernest; Cherryvale.
McMahan, Anna Victoria; *Albion, Ill.*
Moreau, Isaiah Daniel; *Thibodaux, La.*

CORRESPONDENCE—*continued.*

Myers, Margaret Ann; Independence.
Person, Laura; Caney.
Rankin, Geneva; *Redfield, S. Dak.*
Reimer, Gus; Holton.
Robinson, Lily E.; Columbus.
Shackelford, Ella; Grenola.
Sholtz, Edward F.; Pittsburg.
Thomas, Claude; Pleasanton.
Whitby, Blodwen; Independence.
Whitby, Edna; Independence.
Winstead, Ethel Verna; *Iantha, Mo.*
Wolfe, John Iris; St. John.
Wright, Hazel; Faulkner.
Wynn, Edith Arnetta; *Tulsa, Okla.*

SUMMARY OF ATTENDANCE.

From Kansas, 76 counties	2,560
" Alabama	1
" Arkansas	8
" Colorado	4
" California	4
" Indiana	1
" Illinois	3
" Kentucky	3
" Louisiana	3
From Michigan	1
" Minnesota	1
" Missouri	95
" Nebraska	6
" Oklahoma	34
" Texas	20
" Wisconsin	1
Total	2,745

SUMMARY BY CLASSES.

Graduates	30
College Department.	
Seniors	103
Juniors	178
Sophomores	368
Freshmen	642
Specials	162
	1,458
Normal High School Department.	
Seniors	74
Juniors	105
Sophomores	113
Freshmen	81
Specials	33
	406
Rural Specials	44
Training School.	
Model School	269
Kindergarten	63
Special Department.	
Extension students	699
Correspondence students	125
Total	3,089
Duplicates	344
Total	2,745

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VOL. XV No. 3

DEC 27 1920

KANSAS
STATE MANUAL TRAINING NORMAL SCHOOL

A COLLEGE FOR TEACHERS

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MARCH 15, 1919

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STATE MANUAL TRAINING NORMAL SCHOOL
PITTSBURG, KANSAS

Entered May 6, at Pittsburg, Kan., as second-class matter under act of Congress of July 6, 1904.

A SUMMER SCHOOL GROUP AT STATE MANUAL TRAINING NORMAL COLLEGE.

GROUP IN PLAYGROUND ACTIVITY, STATE MANUAL TRAINING NORMAL COLLEGE.

VOL. XV
No. 3

March 15, 1919

Kansas State Manual Training Normal School

A COLLEGE FOR TEACHERS, INCLUDING ALL THE
GENERAL AND INDUSTRIAL ARTS AND
VOCATIONAL SUBJECTS

PITTSBURG

KANSAS STATE PRINTING PLANT
IMRI ZUMWALT, STATE PRINTER
TOPEKA. 1919
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RUSS HALL.

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HON. HENRY J. ALLEN, *Chairman ex officio.*
HON. E. W. HOCH, *Vice Chairman.* DR. WILBUR N. MASON.
C. W. MYERS, *Asst. Business Manager.*
JAS. T. LARDNER, *Asst. Business Manager.*

CALENDAR, 1919-1920.

September 15, Monday....	Entrance examinations.
September 16, Tuesday....	Enrollment.
September 17, Wednesday..	Beginning of class work.
November 17, Monday.....	Mid-semester term opens.
November 27-30	Thanksgiving vacation.
December 16, Tuesday.....	First semester musical recital.
December 18, Thursday...	Contest in oration and debate.
December 23, Tuesday.....	Work closes for 1919.
January 5, 1920, Monday..	Resumption of first semester's work.
January 28, Wednesday....	First semester's work closes.
January 29, Thursday.....	Second semester opens with enrollment.
January 30, Friday.......	Beginning class work.
March 26, Friday.........	Commemoration day.
April 5, Monday..........	Mid-semester term opens.
April 27, to May 1........	Annual musical festival.
May 30, Sunday..........	Baccalaureate sermon.
May 31, Monday..........	Annual recital by music department.
June 1, Tuesday..........	Contest in dramatic art and declamation.
June 2, Wednesday.......	Commencement.
June 7, Monday..........	Summer Session opens.

Calendar for 1919.

JANUARY.

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DECEMBER.

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Calendar for 1920.

JANUARY.

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JULY.

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AUGUST

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SEPTEMBER.

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OCTOBER.

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31						

NOVEMBER.

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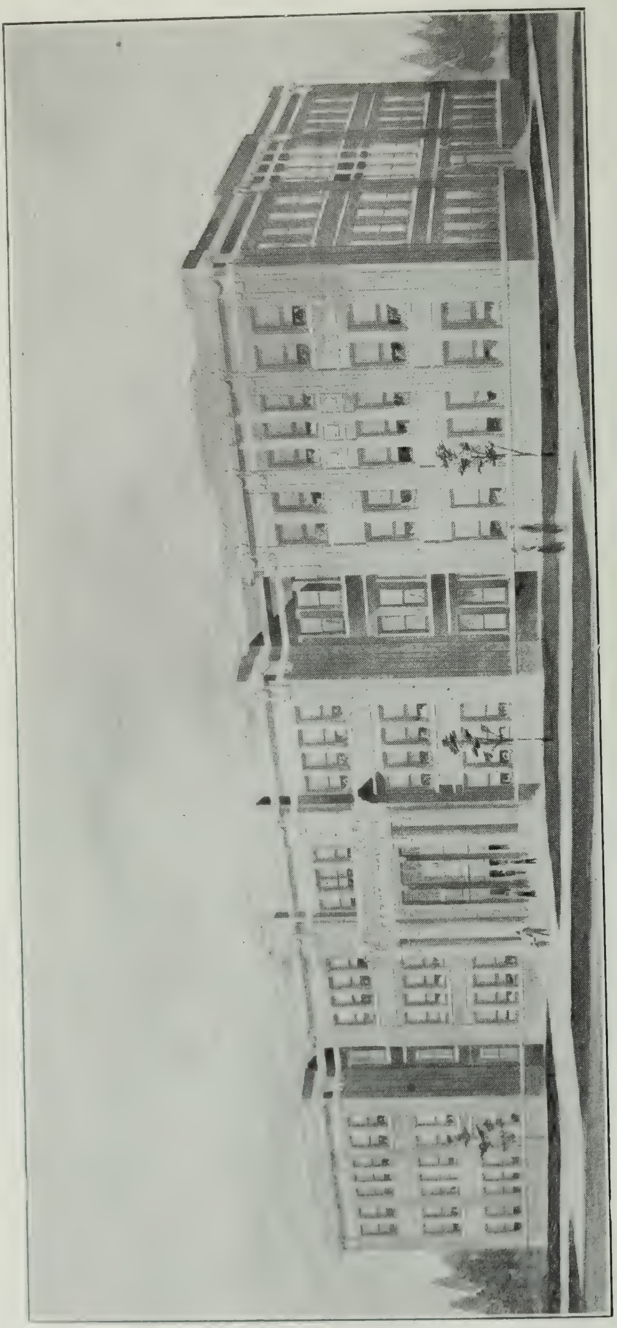

CARNEY HALL.

HOME ECONOMICS AND GENERAL SCIENCE.

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FOREWORD.

IN THE YEAR 1903 the state legislature passed a bill which authorized the establishing of an institution for the training of teachers, which was to be known as the State Manual Training Normal College. For six years following this act the student body was housed in the Central public-school building, on the corner of Fifth and Walnut streets—a building loaned to the state by the city of Pittsburg.

The 1907 legislature made an appropriation of $150,000 for the erection of the Administration Building, and its equipment. The erection of this building was begun August, 1907, and completed December, 1908. In January, 1909, the School was moved into this beautiful new edifice on South Broadway between Cleveland and Lindburg avenues.

The legislature of 1911 made an appropriation of $50,000 for the erection of a building to be used for industrial and applied arts. This building was begun in the spring of 1912 and completed in the spring of 1913. Upon its completion the equipment from the old shops was installed and in addition thereto $15,000 worth of new equipment; so that by the middle of the year 1914 the State Manual Training Normal College had the most spacious and best-equipped shop building with facilities for carrying on the industrial and applied arts courses.

The legislature of 1913 made an appropriation of $32,500 for the erection of a heating and power plant sufficient in size to admit of additional heating apparatus to meet the needs of the institution for many years. This heating plant and power station was erected and completed during the year 1914.

On the 29th day of June, 1914, fire by lightning almost completely destroyed the Administration Building. The fire occurred Monday morning at 3:30, and so rapid was its spread that not even the class books of the forty or forty-five instructors were saved. Practically everything they had accumulated—equipment, books, working apparatus, etc.—which represented years of patient assembling on the part of faculty members, all went up in smoke. Although the Summer Session was in full progress with an attendance of approximately 1,200, not a single expression of discouragement was heard or in evidence. Public buildings of the city of Pittsburg were opened to the Summer School, and here and there in these buildings over the city the Summer School was continued to a successful close on schedule time. Governor Hodges, with the Board of Administration, was summoned, and with assurance and encouragement from them, inside of twenty-four hours the citizens of Pittsburg had held a mass meeting, selected a committee, and inside of thirty-six hours had pledged nearly $100,000 as a fund to be placed at the disposal of the Board of Administration for the reconstruction of the destroyed building. Work was immediately begun and prosecuted as rapidly as possible.

When the legislature of 1915 met, without question they made an appropriation of $188,565.65 for the replacement of funds contributed by the citizens, and for the completion of the building, its equipment and the temporary structures which had been erected in which to house the Schools while the new building had been under progress of construction. In the rebuilding fireproof construction was used practically throughout, and the whole building, now known as Russ Hall, was constructed on a more beautiful and a more substantial plan.

The legislature of 1917 made an appropriation of $200,000 with which to erect a household economics and general science building, with an auditorium annex, the same to be known as Carney Hall, named in honor of Governor Carney, who served as governor of Kansas during the Civil War period. This beautiful and complete structure was completed and occupied June 1, 1919. In this building are housed most comfortably and advantageously the following departments: Home Economics; Biological and Agricultural Sciences; Chemical and Physical Sciences.

All laboratories are spacious, well lighted, well ventilated, and adequately furnished with new and most modern equipment. All lecture rooms are especially commodious, and conveniently located in relation to laboratories. Ample offices, rest rooms and reception rooms for convenience of all departments have been provided.

The large auditorium, with its soft, sky-like effect, is one of the features of the new building. All laboratory and lecture hall floors are of cork, thus reducing the noise which usually results from walking about, or the moving of chairs, to the minimum; also insuring ease and comfort to those standing for long periods in experimental work. The installation in this building of 800 single-deck lockers, for the use of students for books and wraps, is a much-needed provision and will be greatly appreciated by all students as a place of safety for such belongings.

The same legislature made an appropriation of $1,500 each biennium for the beginning of a new recreation and athletic field.

During the year 1917 Hare & Hare, of Kansas City, landscape architects, were employed by the Board of Administration to submit a landscape of the grounds and suggest a permanent building plan for the institution. Their plan was submitted and finally adopted in the summer of 1917, and when followed out during the course of the next ten years will make the campus and building arrangement of the State Manual Training Normal College one of the most beautiful and unique of educational plants.

Although the physical development of the State Manual Training Normal College has been remarkable, it is by no means the most significant fact concerning the institution's history. From an enrollment of 50 at the opening of the College in 1903, the student body has increased annually until it reached a total enrollment for the year of 1917-18 of 3,449. To date, January 27, for the present year, although we have suffered because of war conditions and the influenza epidemic, the total enrollment is 2,908, considerably in excess of that for the same period in preceding years.

The students attending the State Manual Training Normal College come from many states and from almost every county in Kansas. Her graduates are now teaching in half the states in the Union, and it is no more unusual to have calls for teachers from the states of Missouri, Idaho, Texas, Minnesota or Arizona than to receive calls from our own state.

Neither is the phenomenal growth in the student body of the institution the most significant thing. In fact, this growth is only the result of a far-seeing, true educational program conceived by its founder, Mr. R. S. Russ, and developed and promoted by the efficient self-sacrificing men and women who have constituted her faculties during the sixteen years.

For a number of years the President and Faculty of the State Manual Training Normal College have held to the theory that short courses in trade, industry and mechanics should be offered with reference to preparation for teachers, so that the individual who finds himself with even a little time to spare could come to the institution and here find an opportunity to take work of such nature as will improve his spare time by increasing his efficiency. Many courses of this nature have been arranged, and already many students have begun to improve the opportunity afforded along these lines.

The State Manual Training Normal College has stood emphatically and without compromise for the broadest and most democratic educational principles. It has always practiced, as well as preached, that an educational institution exists for the one purpose—that of serving society by means of the most efficient training of the individual, and by the development of the correct attitude of the individual to society—an attitude of efficient service. It has never been the policy of the institution to encourage, or even tolerate, anything that would not conserve and promote democracy of relationship. Its policy has always been to create and conserve such a social atmosphere as to make both the student of financial means and the student without financial means to feel perfectly at home within its walls; and students have always come to understand within a short time after entering that nothing except merit and worthiness is necessary to recognition and standing with the institution's faculty.

Last year there were graduated from the degree courses of the institution 76 persons, receiving the bachelor of science degree in education. Two hundred twenty-four persons also completed the two-year or life diploma course. In addition to these, something over 100 received their one-year and three-year state certificates. Many received the special certificates.

The promise for future growth was never brighter, and it would appear that the institution is just beginning its growth, and its greatness in the field of normal college education. Its aim and policy is to-day, as it always has been, except with enlarged vision from year to year, the highest possible degree of efficient preparation of teachers for every field of public-school teaching.

Last year over 600 were enrolled in the evening classes, which were strictly classes in trade and industry. There were represented in this number the following groups of persons:

Commercial	106
Telegraphy	70
French	10
Fuel Administration	27
Woodworking	4
Stationary Engineering	74
Electrical Machinery	33
Automobile Courses	64
Machine Shop Practice	23
Drawing	30
Poultry Culture	3
Mining	174

Many splendid expressions of appreciation have been received by the President from various organizations of those engaged in trade and industry regarding the work offered by the institution, and strongly urging not only a continuation but an enlarged program along the lines of their respective needs.

Four-year courses leading to the college degree, with major work in the following departments, are offered: Domestic science and art, industrial arts, biology, English, history, mathematics, the physical sciences, education and foreign languages.

Two-year courses leading to the normal diploma are offered in the following subjects and departments: Kindergarten teachers, primary teachers, intermediate teachers, rural teachers, commercial, agriculture, drawing supervision, music supervision, arts and crafts, domestic science and art, public speaking, playground directorship, and athletic coaching.

Special certificates entitling the holder to teach manual training, domestic science and art, agriculture, commerce, drawing, music, and other occupational subjects in the public schools of Kansas are granted upon completion of special courses as outlined for these subjects.

The demand to-day for teachers especially prepared in technical and mechanical subjects is very great indeed—a demand far exceeding the available supply. The State Manual Training Normal College has organized many courses to meet these present-day and post-war-time demands. Shorter and more intensive courses have been arranged, Saturday and evening courses. (See list as catalogued.) An opportunity is offered for shopmen, men of the trades, to enter and in the shortest possible time prepare themselves for the work of teaching along these technical and mechanical lines.

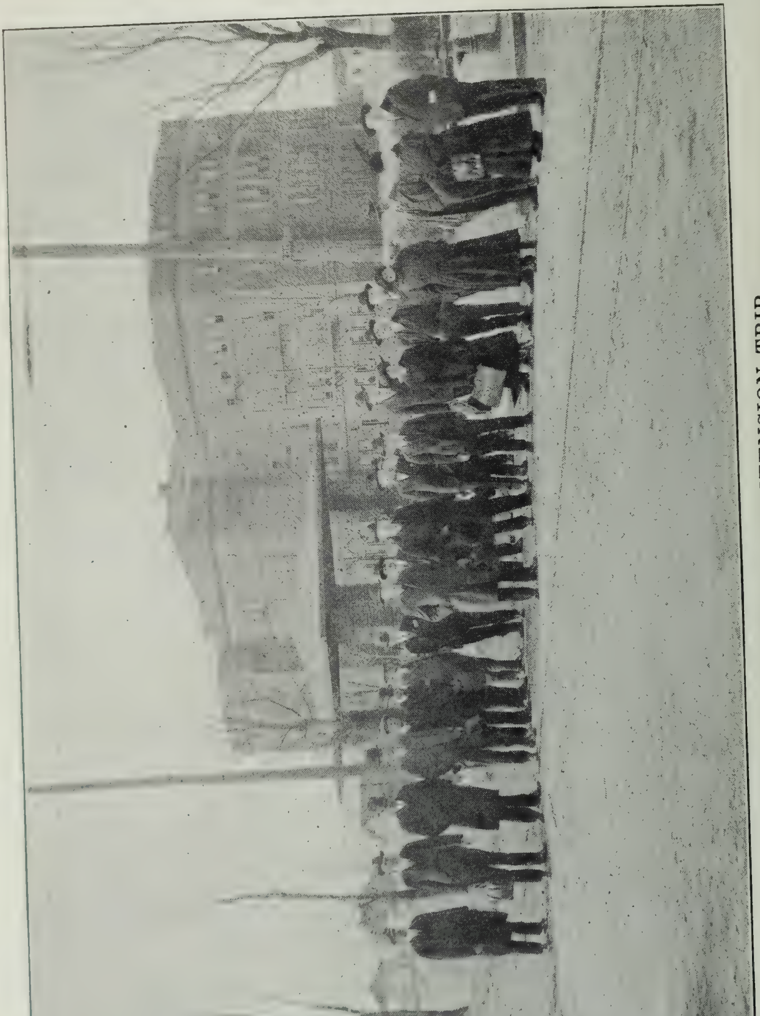
Opportunity is afforded each year for industrial surveys in near-by cities and communities. The department of household economics is giving much attention to courses especially designed to meet the demands for conservation in both food and clothing. (See departmental courses.) The department each year carries on an extensive and practical study of home conditions, community life, and the accumulation of other information of a practical nature.

In addition to the wide field of industrial and vocational education, seven other distinct departments offer college major courses in the so-called academic field. The institution is attempting, and it would seem with considerable degree of success, the most practical and vital application of all academic subjects taught, and the closest and most effective correlation of academic and industrial subjects.

While it is more advantageous by far to enter at the beginning of terms, or quarters, it must be strictly understood that students may enter the institution and begin work at any time during the year.

For further information address

W. A. BRANDENBURG, *President*,
PITTSBURG, KAN.



FACULTY STARTING ON EXTENSION TRIP.

Kansas State Manual Training Normal.

The Faculty.

The names of the members of the faculty are arranged in order of their tenure, except President and Dean of College.

WILLIAM A. BRANDENBURG, Ph. B.,

President.

Drake University, Ph. B., 1895-1900, Graduate of College of Liberal Arts; Superintendent Park Avenue Schools, Des Moines, Iowa, 1900-1903; Superintendent Capital Park Schools, Des Moines, Iowa, 1903-1905; Superintendent of Schools, Mason City, Iowa, 1905-1910; Superintendent of Schools, Oklahoma City, 1910 to August, 1913; Assistant Professor in Department of Education, Drake University, Summer Sessions, 1903, 1904, 1905; Member National Education Council; Author of "Outline Studies in U. S. History and Civics"; President State Manual Training Normal College, August, 1913.

G. W. TROUT, A. B., A. M.,

Dean of College; Professor of History and Social Sciences

A. B., Ottawa University, 1899; Student of Theology and Sociology, Rochester Seminary, 1899-1902; M. A., Ottawa University, 1902; Professor of History and Social Sciences, Kansas State Manual Training Normal, 1906—.

ODELLA NATION, B. S.,

Librarian.

Special work in Library Methods, Kansas State Normal, 1903; B. S., State Manual Training Normal, 1918. State Manual Training Normal, 1903—.

LYLE BROWER, B. S.,

Professor of Drawing and Design.

B. S., University of Illinois, 1898; Graduate Student in Education and Drawing, University of Illinois, Summer Terms, 1902-1904; Director of Manual Training and Drawing, Public Schools, Rockford, Illinois, 1898-1903; Mechanical Drawing Instruction in Y. M. C. A. Evening School, Rockford, Illinois, 1899, 1900, 1901; Director of Vacation School, Rockford, Illinois, 1899, 1900; Director Manual Training, Elgin, Illinois, 1903-1904; Director Manual Training and Instructor in Free-hand Drawing, High School, Springfield, Illinois, 1904-1905; Member National Society for the Promotion of Industrial Education, 1914; Trustee of the Kansas Federation of Art, 1916-1918; Professor of Drawing and Design, Kansas State Manual Training Normal, 1905—.

ELSA SCHOSHUSEN, A. B.,

Kindergarten Critic Teacher in the Training School.

Kindergarten and Primary Diploma, Kansas State Normal, 1901; Life State Certificate Kansas State Manual Training Normal, 1910; Teacher, Pittsburg City Schools, 1905-1906; Kindergarten Critic Teacher, Kansas Manual Training Normal, 1906—; A. B., State Manual Training Normal, 1913.

EULALIA E. ROSEBERRY, B. S.,

Professor of Geography

Diploma, Kansas State Manual Training Normal, 1906; Diploma and Life State Certificate, Kansas State Normal, 1907; Professor of Geography, Kansas State Manual Training Normal, 1907—; Special Work, Chicago University. B. S., State Manual Training Normal, 1916.

JAMES ANDERSON YATES, B. S., M. S.,

Professor of Chemical and Physical Sciences

B. S., University of Kentucky, 1890; M. S., University of Kentucky, 1899; Graduate Student, University of Chicago, Summer Terms, 1895, 1896, 1898, 1900, 1901, 1902; Fellow American Association Advancement of Science; Principal Laurel Seminary, London, Kentucky, 1890-1892; Professor Natural Sciences, Williamsburg Institute, 1892-1897; Professor of Natural Sciences, Ottawa University, 1897-1907; Union Pacific Fossil Field Expedition, Summer, 1899; Assistant Geologist Kansas State Geological Survey, Summers, 1903, 1904, 1905, 1906; Professor Physical Sciences, Kansas State Manual Training Normal, 1907—.

ERMINE OWEN, M. A.,

Professor of English.

M. A., McGee College (now Missouri Valley College), 1879; Summer Student in Hammil School of Expression, 1886 and 1887; Chicago Conservatory of Expression, 1888; Fritz Krummel Turnverein, New York, 1902; Chicago Normal School, 1903; Head of Department of History and Civics, State Normal School, Kirksville, Missouri, 1883-1899; Professor of Oratory and Physical Culture and Assistant in English, State Normal School, Normal, 1899-1904; Professor of English, State Manual Training Normal, 1907—.

D. M. BOWEN, B. A.,

Principal of Training School.

Diploma, Central Normal College, Danville, Indiana, 1885; B. A., Kansas Normal College; Chicago, Summer, 1914; Life Diploma, Kansas Board of Education, 1905; Teacher, Fort Scott, 1889; Special Work, Indiana University, Summer, 1892; Special Work, University Rural and Village Schools, 1885-1888; Ward Principal, 1889-1892; Principal High School, Fort Scott, 1892-1895; Superintendent City Schools, Fort Scott, 1895-1909; Principal of Training School, Kansas State Manual Training Normal, 1909-1913; Secretary, State Board of Education Administration, 1913-1915; Principal of Training School, Kansas State Manual Training Normal, 1915, 1916.

ORIS P. DELLINGER, A. B., PH. D.,

Professor of Biology.

Diploma, Indiana State Normal, 1900; A. B., Indiana State Universiy, 1904; Fellow in Biology, Clark University, 1904-1907; Ph. D., Clark University, 1907; Fellow American Association Advancement of Science; Instructor in Biology, Indiana State Normal, 1901-1903; Instructor in Botany and Nature Study, Indiana University, Summer Terms, 1902-1908; Assistant in Biology, Clark College, 1904-1907; Instructor in Biology, Clark College, 1907-1908; Professor of Biology, Winona College, 1908-1909; Professor of Biology, Kansas State Manual Training Normal, 1909—.

JOHN WILLIAM FUHRER, B. S.,

Director Physical Education and Athletics.

B. S., Doane College, 1906; Student Director of Physial Training, Doane College, 1904-1906; Director of Physical Training, Doane College, 1906-1908; Physical Director Y. M. C. A., Springfield, Missouri, 1908-1909; Director of Physical Education, Kansas State Manual Training Normal, 1909—.

LILLIAN I. McLEAN, B. S.,

Primary Critic Teacher in Training School.

Primary Teacher, Fort Scott, 1903-1909; Primary Teacher, Kansas City, Missouri, 1909; Primary Critic Teacher, Kansas State Manual Training Normal, 1911—.

J. A. G. SHIRK, M. S.,

Professor of Mathematics and Applied Mechanics

A. B., McPherson College, 1901; A. M., McPherson College; M. S., University of Kansas, 1905; Sigma Xi, University of Kansas, Iota Chapter, 1905; Graduate Student, University of Kansas, Summer Sessions, 1909, 1911; Graduate Student, University of Chicago, Summer Quarters, 1906 and 1910; Professor of Mathematics and Physical Sciences, McPherson College, 1901-1904; Fellow in Mathematics, University of Kansas, 1904-1905; Assistant Instructor in Mathematics, University of Kansas, 1905-1906; Professor of Physics and Engineering, Ottawa University, 1906-1912; Assistant Professor of Physical Sciences, Kansas State Manual Training Normal, 1912-1914; Professor of Mathematics, 1914; Professor of Mathematics and Applied Mechanics.

BURTON WILLIAM SCHEIB, M. A.,

Associate Professor of Agriculture.

B. A., Park College, 1908; Fellow in Botany, Curator Botanical Herbarium and Assistant in Botanical Gardens, University of Michigan, 1909-1910; Director of State Experiment Station and Professor of Agriculture, State Agricultural School, Wetumpka, Alabama, 1910-1912; Assistant Professor of Agriculture, Kansas State Manual Training Normal, 1912—.

A. H. WHITESITT, B. S.,

Professor of Industrial and Applied Arts.

Vincennes University, 1897; Diploma, Indiana State Normal, 1908; Bradley Polytechnic Institute and The Stout Institute, Summers, 1908-1912; Director of Manual Training City Schools, East Chicago, 1908-1911; Instructor in Emmerich Manual Training High School, Indianapolis, 1911-1913; Director of Woodworking Department, Kansas State Manual Training Normal, 1913-1917; Director of Industrial and Applied Arts, 1918—.

ADELA ZOE WOLCOTT, PH. B., A. M.,

Professor of Home Economics.

Diploma, American School of Home Economics, 1907; A. D. E., Lewis Institute, 1908; Ph. B., University of Chicago, 1909; Student, Graduate School of Home Economics, Summer, 1912; Head of Department of Home Economics, Colorado Woman's College, Denver, Colorado, 1909-1913; A. M., Teachers' College, Columbia University, 1918; Professor of Home Economics, State Manual Training Normal School, 1913—.

MARGARET COVENTRY, A. B.,

Instructor Physical Sciences.

Grade Teacher, Fort Scott, 1906-1910; Life State Certificate, Kansas State Manual Training Normal, 1912; Student Assistant in Chemistry, Kansas State Manual Training Normal, 1911-1913; A. B., Kansas State Manual Training Normal, 1913; Assistant in Chemistry, Kansas State Manual Training Normal, 1913—.

BELLE PROVORSE,

Secretary to the President

Graduate of Montgomery County High School, Independence, Kansas, 1909; National Business College, Independence, Kansas, 1910; Teacher's Certificate, Gregg School, Chicago, 1911; Life Certificate, State Manual Training Normal, 1918; Principal, Shorthand Department, Coffeyville Business College, Coffeyville, Kansas, 1911-1912; Shorthand Instructor, Farmers' Business College, Fort Worth, Texas, 1912-1913; Shorthand Instructor, State Manual Training Normal School, 1913; Stenographer, State Manual Training Normal School, 1914; Secretary to the President, State Manual Training Normal School, 1917—.

JAS. W. HANBERY,* A. B.,

Assistant Professor of History.

A. B., Phillips University, 1913; Assistant Professor of History, State Manual Training Normal, 1913-1914; Fellow in American History, Kansas University, 1914-1915; Assistant Profesosr of History, 1916-1917.

NELL CRANE HANBERY, B. S.,

Assistant in English.

Student, Ohio Wesleyan University, 1906-1908; Ohio State University, 1909; Instructor in English, East Liverpool, Ohio, High School, 1908-1909; Ward Principal, East Liverpool, Ohio, 1910-1911; Departmental Work, Oklahoma City Schools, 1911-1913; Critic in Training School at State Manual Training Normal, 1913—.

WILLIAM EDGAR RINGLE,† B. A.,

Associate Professor of Biology.

B. A., Kansas University, 1898; Student, Ottawa University, 1894-1896; Principal High School, Coffeyville, Kansas, 1898-1899; Instructor in Science and Curator of the Museum, Montgomery County High School, Independence, Kansas, 1899-1902; Author of "Student's Botany," a Spring Flora of Kansas, 1901; Superintendent City Schools, Coffeyville, Kansas, 1902-1904; Field Manager Oil Operations, 1904-1905; Superintendent Mines and Mining for the Badger Mining and Milling Company, Joplin, Missouri, 1905-1908; Practical Agriculture, 1908-1910; Department of Physical and Biological Sciences, Cherryvale High School, 1909-1913; Professor of Nature Study and Applied Biology, Kansas State Manual Training Normal, 1913—.

F. H. DICKINSON,

Assistant Professor of Industrial Arts.

Served apprenticeship in Santa Fe shops, Topeka; Twelve years' consecutive service with Santa Fe Railway Company; Two years in service of the Smith Automobile Company, Topeka, Kansas; Two years with the Chalmers Machine Co., Milwaukee, Wisconsin; Technical Training in The Stout Institute and Kansas State Manual Training Normal; Four years Director of Manual Training in High School, Coffeyville, Kansas; Instructor in Pattern Making and Foundry, State Manual Training Normal, 1914—.

HATTIE MOORE MITCHELL, A. M.,

Professor of Methodology, and Dean for Women.

Ph. B., Drake University, 1906; Pe. B., Drake University, 1898; A. M., Drake University, 1907; Student, University of Chicago, 1909; Teacher of Mathematics in High School, Mason City, Iowa, 1888-1890; Principal of Schools, Floyd, Iowa, 1893-1895; Preceptress in Nora Springs Seminary, 1895-1897; Supervisor, Training School for Primary Teachers, Drake University, 1897-1902; Dean of Women, Drake University, 1902; Instructor in Mathematics, Drake University, 1902-1909; Assistant Professor of Mathematics, Drake University, 1909-1910; Professor of Methodology, Drake University, 1910-1914; Professor of Methodology, Kansas State Manual Training Normal, 1914—.

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* On leave of absence in United States army.

† On leave of absence as Regional Educational Superintendent with Y. M. C. A. in France.

E. F. SHOLTZ,

Instructor in Commercial Subjects.

K. N. C., 1897-1898; Clinton Academy, 1898-1899; Cooper College, 1899-1900; Graduate, Gregg School, Chicago, and P. B. C., Pittsburg; Principal, Ward Schools, 1904-1907; Head of Department, Pittsburg Business College, 1907-1912; Head of Commercial Department, Pittsburg High School, Pittsburg, Kansas, 1912-1914; Director of Department of Commerce, Kansas State Manual Training Normal, 1914—.

J. G. WILKINS,*

Instructor in Free-hand Drawing and Wood Finishing.

Two Summers' Work in the Fine Arts Institute, Kansas City, Missouri; One Year's Credit in the Academy of Fine Arts, Chicago, Illinois; Assistant in the Life Class in the Academy of Fine Arts; One and One-half Years' Work in the Kansas State Manual Training Normal; Instructor in Kansas State Manual Training Normal, 1914—.

ANNIE MARRIOTT, B. S.,

Assistant Professor of Domestic Science.

Life certificate, Kansas State Manual Training Normal, 1912; B. S., State Manual Training Normal, 1914; Chicago University, Summer, 1914; Student Assistant in Domestic Science, Kansas State Manual Training Normal, 1913-1914; Assistant Instructor in State Manual Training Normal, 1914-1918; Assistant Professor, 1918.

WALTER McCRAY,

Director of Music.

Student, Herman Bellstedt, World's Greatest Cornet Soloist and Band Master; Student, Harbard Brase of the Conservatory, Stockholm, in Harmony and Counterpoint; Director of Music, Nickerson Normal and High School, 1899-1900; Head of Band Department; Teacher of Harmony, Musical History, Supervisor of Model School Music, Bethany College, Lindsborg, Kansas, 1901-1903; Received First Prize at the State Musical Jubilee at Hutchinson, Kansas, in Cornet Soloist Contest, 1899; Conductor of McCray's Band, which is one of the leading organizations of the Middle West; Wide experience as Conductor of Choral Societies; Supervisor of School Music.

O. F. GRUBBS, A. B., B. S.,

Assistant Professor of History.

Diploma, State Normal School, 1912; Life Certificate, 1905; A. B., B. S., Kansas University, 1914; Teacher and Ward Principal in City Schools, Kansas, 1902-1906; Principal, Thayer, Kansas, 1906-1909; Superintendent, Colony, Kansas, 1909-1910; Superintendent, Neodesha, Kansas, 1910-1912; Assistant in History, Kansas State Manual Training Normal, 1914—.

R. HESSELBERG,

Violinist.

Student of W. Besekirski, Imperial Court Violinist in Moscow, Russia; Graduate Royal Academy of Music in Berlin, Main Subject, Violin, under Prof. Dr. Joseph Joachim, 1894-1899; Private Assistant to Doctor Joachim, in Berlin, 1900-1905; Concertized in Europe, 1905-1907; Teacher of the Calhoun School of Music, Joplin, Missouri, 1907-1914; Soloist with the Minneapolis Symphony Orchestra, 1912; Chicago Symphony Orchestra, 1908; St. Louis Symphony Orchestra, 1913; Soloist of the American Guild of Violinists, in Chicago, 1912; President F. Kneisel; Member and Soloist of the Missouri Music Teachers' Association, 1913.

CHARLES R. WASSER, JR.,

Assistant Professor of Industrial Arts.

Graduate, Williamson Industrial School, Pennsylvania, 1908; Three Years' Practical Shop Experience with Bethlehem Steel Company, Bethlehem, Pennsylvania, and Ingersoll Rand & Co., Easton, Pennsylvania; Superintendent of Shop Work, Ursinus College, Collegeville, Pennsylvania, 1910-1912; Student, Teachers' College, Columbia University, Summers, 1908-1912; Resident Student, 1912-1913; Instructor in Furniture Design and Cabinetmaking, Kansas State Manual Training Normal School, 1915—.

SAMUEL J. PEASE, M. A.,

Professor of Languages.

A. B., Northwestern University, 1897; M. A., Northwestern University, 1898; Graduate Student at Northwestern, 1897-1899; Summer, 1908; Colorado, 1902-1903; Chicago, 1903-1905 (Fellow in Greek), and Summers, 1900, 1903, 1906, 1914; Instructor in Greek and Modern Languages, Hamline University, 1899-1901; History and Civics, Colorado State Preparatory School (Boulder), 1902-1903; Instructor in Greek and German to Assistant Professor of German and French, University of North Dakota, 1905-1913; Latin and German, Chicago High Schools, 1913-1915; Professor of Languages, Kansas State Manual Training Normal School, 1915—.

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* On leave of absence in United States army.

WINFIELD D. ARMENTROUT, A. M.,

Assistant Professor of Education, and Senior High School Adviser.

A. B., Missouri Valley College, 1910; A. M., Columbia University, 1914; Master's Diploma in Education, Teachers' College; Instructor, Chanute, Kansas, High School, 1910-1911; Instructor, Fort Scott, Kansas, High School, 1911-1913; Head of Normal Training Department, Topeka, Kansas, High School, 1914; Assistant Professor of Education, State Manual Training Normal School, 1915—.

MARGARET LEAVITT,

Piano.

Pupil of Ella Behr; Two Years in Berlin, Pupil of Emil Paur; Ten Years' Eperience as a Teacher, Accompanist and Soloist.

GRETA EULALIE SMITH, B. S.,

Professor of Domestic Art.

Special Student, University of Minnesota; Instructor in Domestic Art, Unity Settlement House, Minneapolis, Minnesota, 1902-1908; Instructor of Domestic Art, Minnesota School of Agriculture, 1908-1910; Extension Work, Minnesota, Summer, 1910;* Instructor in Textiles and Clothing, College of Agriculture, University of Minnesota, 1910-1914; Student, Teachers' College, Columbia University, Summer School, 1913; Student, University of Minnesota Summer School, 1914; Student, Teachers' College, Columbia University, 1914-1915; Bachelor's Degree and Bachelor's Diploma, Teachers' College, Columbia University, 1915; Head of Domestic Art Section, Kansas State Manual Training Normal School, 1915—.

R. O. COURTRIGHT, A. B.,

Instructor in Physical Education and Coach of Athletics.

Oklahoma University, 1914; Physical Director and Coach, Oklahoma University Preparatory School, 1914-1915; Diploma from University of Illinois, Summer School, for Athletic Coaches, 1915; Assistant Physical Director and Coach, Kansas Manual Training Normal School, 1915—.

EDITH BIDEAU,†

Voice Instructor.

Bachelor in Music, College of Music, Baker University, 1911; Bachelor of Arts degree, Kansas State University, 1912; Postgraduate degree, College of Music, State University, 1912; Music study under special direction of Madame Kate Bemsberg-Barracchia; Concert work with Minneapolis Symphony Orchestra, two seasons; Assistant in Grand Concert Madame Julia Rives-King, one of the world's greatest pianists; Madame Rose Olitzka, the famous Russian contralto; Edward Kreiser; Private instructor in voice, piano and concert work.

FRED DONAGHY,*

Assistant Professor of Biology.

A. B., Indiana State Normal, 1914; A. M., Indiana University, 1915; Laboratory Assistant, 1910-1914, Indiana State Normal; Fellowship Indiana State University, 1914-1915; Head, Department of Science, Wiley High School, Terre Haute, Indiana, 1915-1916.

VIVIAN ATWOOD,

Assistant Professor of Applied Arts.

Diploma, Applied Arts School, Chicago, Illinois, 1913; Postgraduate work, 1914; University of Chicago, Summer, 1914; Supervisor of Applied Arts, Coffeyville, Kansas, 1914-1916; Instructor in Applied Arts, State Manual Training Normal School, 1916 —.

EDNA IRENE WISWELL, B. A.,

Physical Director for Women.

Teacher's Certificate in Physical Education, 1912, B. A., 1914, Industrial Institute and College, Columbia, Mississippi; Assistant in Department of Physical Education, Industrial Institute and College, 1913-1916; Attended Columbia University, Summer, 1916; Assistant in Physical Education Department, State Manual Training Normal School, 1916.

W. W. BASS, A. B.,*

Instructor in Physical Sciences.

Washburn College, 1909-1911; A. B., Kansas State Manual Training Normal, 1914; Graduate Student, University of Chicago, Summer Terms, 1914, 1916; Teacher of Physical Sciences, Fort Scott High School, 1914-1916; Assistant in Physical Sciences, Kansas State Manual Training Normal, Summer Terms, 1914-1916; Instructor in Physical Sciences, Kansas State Manual Training Normal School, 1916.

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* On leave of absence in United States army.

† On leave of absence.

ERNEST BENNETT,† B. S.,

Instructor in Languages.

Student in Ottawa University, 1907-1908; B. S., Kansas State Manual Training Normal School, 1917; Principal, Sedan, Kansas, High School, 1904-1907; Superintendent of Schools at Severy, Kansas, 1908-1911; Superintendent of Schools at Howard, Kansas, 1911-1914; Conductor and Instructor in Normal Institutes; Member Editorial Staff of Pittsburg *Daily Headlight* two years; Instructor in Languages, State Manual Training Normal School, 1916-1917.

INA MARIAN McKNIGHT-SCHIDE,

Teacher of Public-school Music Methods.

Graduate Parsons, Kansas, High School; Arts Course, Kansas University; Public-school Music Methods Course, New School of Methods, Chicago; National Summer School, Chicago. Voice Pupil of Barbara Ann Whelpley, Chicago, Elizabeth Cheney and Percy Hemus, New York, William Shakespeare, London.

KATHRYN ALBAUGH, A. B.,

Instructor in Mathematcis and History.

A. B., Washburn College, 1917; Curry School of Expression, Boston, Mass., Summer Session, 1914; Student Assistant in Mathematics, Kansas State Manual Training Normal School, Summer Session, 1917; Assistant Instructor in Mathematics and History, Kansas State Manual Training Normal School, 1917—.

CLELA GILLETT-CAMPBELL,*

Assistant Librarian.

Student, University of Kansas, 1913-1915; Life State Certificate, Kansas State Manual Training Normal, 1917; Assistant Librarian, Kansas State Manual Training Normal, 1917—.

J. F. MITCHELL, A. B., A. M.,

Registrar.

A. B., Ohio Northern University, Ada, Ohio; A. M., Drake University, Des Moines, Iowa; Graduate Student, University of Chicago; Superintendent of Schools, Garner, Iowa, Nora Springs, Iowa; Principal Nora Springs Seminary, Nora Springs, Iowa; Chair of History, Drake University, Des Moines, Iowa; Registrar, 1917—.

EDGAR NELSON MENDENHALL, PH. B.,

Assistant Professor of Education.

Ph. B., University of Chicago, 1917; Student, Franklin College, Franklin, Indiana, Spring Term, 1891; Indiana University, Summer, 1899, Spring Term, 1893, Summer, 1910; Harvard University, Summer, 1896; Teacher in Rural Schools, Johnson County, Indiana, 1890-1893; Principal Township Rural High School, 1893-1896, Decatur County, Indiana; Teacher and Principal City High School, 1896-1903, Greensburg, Indiana; County Superintendent of Schools, 1903-1911, Decatur County, Indiana; Member of Indiana State Reading Circle Board, 1906-1909; City Superintendent of Schools, 1911-1916, Goshen, Indiana.

E. MAUD PATCHIN, B. S.,*

Instructor in Home Economics.

Graduate of Advanced Course, State Normal School, Winona, Minnesota; one Summer Session, University of Wisconsin, Madison, Wisconsin; B. S., Teachers' College, Columbia University; Grade Teacher in Pine Island, Minnesota, and Lewiston, Idaho; Domestic Art Instructor, Washington Irving High School, New York, and Spokane, Washington; Assistant in Domestic Art Department, State Manual Training Normal School, 1917—.

L. NATHAN PIERCE, B. S.,*

Assistant in Public Speaking.

Life Certificate, State Manual Training Normal School, 1915; Student Assistant, 1916-1917; B. S., State Manual Training Normal, 1917; Public Speaking Department, State Manual Training Normal, 1917—.

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* Resigned.

† On leave of absence as Y. M. C. A. secretary in France.

FRANKLIN P. RAMSEY, JR., A. B.,*

Assistant Professor of English.

A. B., 1907, King College, Bristol, Tennessee; Year of Graduate Work, Southwestern Presbyterian University, Clarksville, Tennessee; Two Summer Quarters, University of Chicago; Year of Professional Work in Dramatic Literature, Interpretation and Stage Technique, Chicago Musical College (Dramatic Department), 1909-1910; Course in Education, University of Missouri, Summer of 1917; Assistant in Various Preparatory and College Courses, King College, 1905-1907; Professor of Latin, Clarkesville Female Academy, Clarkesville, Tennessee, 1907-1908; Professor of Latin and Greek, City High School, Columbus, Mississippi, 1908-1909; Instructor in English, Public Speaking and Debating, Omaha High School, Omaha, Nebraska, 1914-1915; Assistant Professor of English, State Manual Training Normal, Pittsburg, Kansas, 1917—.

GEDDES WILLIAM RUTHERFORD, A. B., A. M.,

Assistant Professor of History.

A. B., University of Missouri, 1913; A. M., Harvard University, 1916; University Scholar in Government and Graduate Student in History and Government, Harvard Graduate School of Arts and Sciences, 1914-1915, 1916-1917; Graduate Student in Political Science and History, Graduate School, University of Illinois, 1915-1916; Instructor, State Normal School, Warrensburg, Missouri, 1913-1914; Member of the American Political Science Association.

ZOA A. THRALLS, B. PED., PH. B.,

Intermediate Critic Teacher in Training School.

Ped. B., Fourth District State Normal, Springfield, Missouri, 1913; Ph. B., University of Chicago, 1917; Grade Teacher, Webb City, Missouri, 1908-1909; Instructor in English High School, Prosperity, Missouri, 1909-1911, and Alba, Missouri, 1911-1912; Instructor in English High School, Mound City, Mo., 1913-1914; Seventh and Eighth Grade Critic, State Normal, Springfield, Missouri, 1914-1915.

HUBERT S. WHITE,*

Instructor in Pipe Organ, Wood Wind Instruments.

Graduate, Metropolitan School of Music, Indianapolis, Indiana; Studied Piano with Oliver Willard Pierce and Pipe Organ with Charles Hanson; also Studied Pipe Organ with George Chadwick in Chicago; Head of the Piano Department three years in DePauw University, having charge of the Band Department; Wide Experience as Band and Orchestra Conductor; Director of Coffeyville Concert Band for four years.

BESS M. HAYDEN,

Critic Teacher in Training School.

Graduate, Illinois State Normal, 1908; Grade Teacher, Benton, Illinois, 1909; Grade Teaher, Carbondale, Illinois, 1910-1914; Student, Columbia University, Summers, 1910-1913, Critic Teacher, South Dakota State Normal, 1915; Critic Teacher, Oklahoma State Normal, 1916.

RICHARD ROBERTS SIGLER, A. M.,

Assistant Professor of Biology.

A. B., Indiana State Normal; A. M., Indiana University; Assistant in Physiology, Indiana State Normal; Fellowship in Physiology, Indiana University; appointed Instructor in Physiology in Indiana University School of Medicine, 1917; Sigma Xi, Indiana University, 1917; Indiana Academy of Science.

C. O. VAN DYKE, M. A.,

Assistant Professor of Mathematics.

B. A., Campbell College, 1908; Surveyor, Rooks County, Kansas, 1909-1910; M. A., Kansas University, 1910; Summer Sessions, Kansas University, 1910 and 1916; Professor of Mathematics, Campbell College, 1910-1914; Professor of Mathematics, Kansas City University, 1914-1915; Department of Social Science and Instructor in Mathematics, Kansas City University, 1915 - January, 1918; Assistant Professor of Mathematics, Kansas State Manual Training Normal School, January, 1918—.

VIRGINIA FITZHUGH SHEARER, B. S.,

Assistant Professor of Home Economics.

Student, Mills College, Oakland, California, 1908-1909; Lewiston, Idaho, State Normal, 1909-1910; Diploma, School of Household Arts, Pratt Institute, Brooklyn, 1912; Instructor, Domestic Art, University of Idaho, Moscow, Idaho, 1912-1913; Domestic Art, Lewiston, Idaho, 1913-1915; B. S. in Education and Supervisor's Diploma in Household Arts, Teachers' College, 1916; Assistant Professor Home Economics, State Manual Training Normal School, Summer, 1918—.

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* Resigned.

RALPH W. ERSKINE,

Assistant Professor of Industrial Arts.

Apprentice with Centerville Foundry and Machine Company, Centerville, Iowa; Machinist for Burlington Railroad Three Years; Machinist for Rock Island Railroad Three Years; Machinist at Rock Island Arsenal Three Years; Machinist and Machinist Foreman for Kansas City Southern Railway Fourteen Years; Machine Shop Instructor, State Manual Training Normal School, 1918—.

O. B. BADGER,

Assistant Professor of Industrial Arts.

Bradley Polytechnic Institute, Summers, 1907, 1908, 1909, and the second semester 1908; Stout Institute, Summer, 1909; University of Wisconsin, Summers, 1910-1913 and Second Semester 1912; Instructor Manual Arts, Graysville, Indiana, Consolidated Schools, 1906-1907; Supervisor Manual Arts, Fargo, North Dakota, 1913-1917; Instructor in University of Wisconsin, Summer Terms, 1912-1913; Supervisor of Industrial Arts, Practice Teaching, Kansas State Manual Training Normal, 1918—.

EDITH E. CASSEDAY,

Assistant Professor of Home Economics.

Student, University of Minnesota, 1909-1911; Student, Teachers' College, Columbia University, Summer, 1918; Instructor in Home Economics, St. James, Minnesota, 1912-1913; Supervisor of Home Economics, Wabasha, Minnesota, 1913-1914; Supervisor of Domestic Art, Waterloo, Iowa, 1915-1918; Assistant Professor of Home Economics, State Manual Training Normal School, 1918—.

EDNA MERNITZ, B. S.,

Instructor in Home Economics.

Student, College of Industrial Arts, Denton, Texas, 1913-1915; B. S., State Manual Training Normal, 1918; Instructor in Home Economics, State Manual Training Normal, 1918—.

GEORGE V. EMERY, A. B.,

Assistant Professor of Physical Sciences.

A. B., University of Kansas, 1913; Three Years Student of Electrical Engineering, University of Kansas; Graduate Student, Kansas University, Summer, 1914; Kansas City Western Cabinet and Fixture Company, Summer, 1908; Assistant Electrical Inspector, Colorado Fuel and Iron Company, Pueblo, Colorado, Summer, 1909; Superintendent, Viola, Kansas, Schools, 1913-1914; Instructor in Physics, Iowa State College, Ames, Iowa, 1914-1918; Graduate Work, Iowa State College; Kansas State Manual Training Normal School, 1918—.

CLINTON W. WRIGHT, A. B.,

Assistant Professor of Mathematics.

Life Diploma, Kansas State Normal, 1908; A. B., McPherson College, 1910; Graduate Student, University of Kansas, 1912; Graduate Student, Columbia University, Summers of 1915 and 1916; Superintendent of Clyde, Kansas, 1909-1910; Head of Department of Mathematics, East High School, Waterloo, Iowa, 1912-1917; Principal of High School, Waverly, Iowa, 1917-1918; Assistant Professor of Mathematics, Kansas State Manual Training Normal School, 1918—.

MAUD L. BARGER,

Assistant Professor of Drawing.

S. P., Special Primary, Iowa State Teachers' College; Chicago Art Institute; Church School of Art, Chicago; Chicago Academy of Fine Arts; Supervisor, New Albany, Indiana, 1912-1915; Supervisor, Richmond, Indiana, 1915-1916; Supervisor, Marion, Indiana, 1916-1917; Instructor, Kansas State Normal, Emporia; Instructor, State Manual Training Normal School, 1918—.

ANNE CASELEY, A. B.,

Assistant Professor of History.

Diploma, Richmond Normal Training School, 1902; B. A. Degree, Earlham College, Richmond, Indiana, 1911; Student, Chicago University, Summers of 1905-1912-1918; Traveled in Europe Summer of 1913; Teacher of History and English in Seventh and Eighth Grades, Kendallville, Indiana, 1902-1905; Teacher of History in High School, Kendallville, Indiana, 1905-1909; Teacher of History in High School, Kendallville, Indiana, 1911-1912; Teacher of History in Muncie Normal, Muncie, Indiana, 1912-1917; Teacher of History, Kansas State Manual Training Normal School, 1918—.

BURNA McCULLOCH-STRONG, A. B.,

A. B., Cornell College, Mount Vernon, Iowa; Graduate of Cornell College School of Oratory; Student in Phidelah Rice School of Spoken Word; Public Speaking Department of Cornell College, 1915-1918; Member of National Association of Teachers of Speech; Department of Public Speaking of State Manual Training Normal School, 1918—.

CHESTER M. JONES,

Instructor in Commerce.

Graduate Draughon's Practical Business College, Denison, Texas; Graduate Commercial Department, Oklahoma Agricultural and Mechanical College, Stillwater, Oklahoma, 1911-1913; Life Diploma, State Manual Training Normal School, 1917; Taught in Grade Schools Two Years; Bookkeeper and Clerk Three Years; Principal, Pawnee Business College, Pawnee, Oklahoma, One Year; Head Commercial Department in the High School and Supervisor of Writing in the Elementary Grades One Year, Park City, Utah, 1913-1914; Head Commercial Department, Pittsburg High School, Pittsburg, Kansas, 1914-1918.

WM. H. MATTHEWS,

Instructor in Physical Sciences.

Student State Manual Training Normal School, 1903, 1904, 1905, 1915, 1916, 1817, 1918; Instructor Physical Sciences, 1918—.

JESSIE C. LESLIE, B. S.,

Critic Teacher in Training Schools; B. S. in Education; Seven Years' Experience in City Schools; One Year High-school Experience; State Manual Training Normal School. 1918—.

UNA J. PEASE, B. S.,

Assistant in Biology.

Life State Certificate, Kansas State Manual Training Normal, 1914; B. S., Kansas State Manual Training Normal 1916; Instructor in Nature Study, Grade Schools, Fredonia, Kansas, 1916-1917; Instructor in Biology and Agriculture, High School, Fredonia, Kansas, 1917-1918; Assistant Instructor in Biology, Kansas State Manual Training Normal 1918—.

INA L. HILL, PH. B.,

Instructor in Languages.

Graduate of High School, Fort Dodge, Iowa; Graduate of Grinnell College, Grinnell, Iowa; Student at Chicago University, One Summer; Student at Iowa State University, One Summer; Student at University of Colorado, One Summer; Student at University of California, One Year; Teacher in High Schools at Sutherland, Iowa, 1903-1905; Spencer, Iowa, 1905-1908; Mitchell, South Dakota, 1908-1909; Douglas, Wyoming, 1912-1917; Instructor in Languages, State Manual Training Normal, 1918—.

ANTHONY STANKOWITCH,

Instructor of Piano.

Graduate, Royal Conservatory of Leipsic; Thre Years' Post Graduate Work, Vienna; Head of Piano Department, Philadelphia Conservatory, Three Years; Instructor Piano in Northwestern University, Five Years.

CHARLES S. MATTHEWS,

Assistant Professor of Industrial Arts.

Diploma, American Technical Correspondence School; Machinist's Apprentice, Guebaugh & Kunkle Manufacturing Company, Wichita, Kansas; One and One-half Years as Mechanic with Smith Auto Company, Topeka; Two Years Machinist and Electrician for Overton Manufacturing Company, Topeka; One and One-half Years as Mechanic with Centaur Auto Company, Buffalo, New York; Ten Years Manager of Garages and Machine Shop; Instructor in Automobile Mechanics, State Manual Training Normal, 1919—.

ELIZABETH HALLENBECK GILBERT,

Voice Instructor.

Studied Voice under Madame Dyas-Standish, of New York City, Herman De Vries and other Teachers of Chicago, but for the Past Nine Years with Lucille Stevenson, of the Cosmopolitan School, Chicago; Piano from the age of six, with Various Teachers in Minneapolis, Chicago and New York; Taught Privately in Chicago, was Soloist at Several Churches, and Appeared in Recitals, Season 1917-1918; Teacher of Voice and Director of Girls' Glee Club at Lawrence Conservatory, Appleton, Wisconsin; Honorary Member of Mu Phi Epsilon, National Musical Sorority; Kansas State Manual Training Normal, 1919—.

H. G. WEAVER, Major Infantry, U. S. Army,
Professor of Military Science and Tactics.
Wabash College, Crawfordsville, Indiana, 1903-1904; United States Military Academy, West Point, New York, 1904-1908; Professor, Military Science and Tactics, State Manual Training Normal, January 3, 1919—.

W. R. CLEVELAND, B. S., M. S.,
Assistant Professor of Chemistry.
B. S., Kansas Manual Training Normal; M. S., University of Wisconsin; Superintendent of Schools; Assistant Professor of Chemistry, College of Physicians and Surgeons, Medical Department of University of Southern California.

Special Assistants.

SUPT. C. S. RISDON, Education.
G. N. NYMAN, Industrial Arts.
JOSEPH PARKS, Industrial Arts.
W. L. FRILEY, Industrial Arts.
BERTHA SPENCER, Industrial Arts.
A. B. STEELE, Biology.
LORENE BAILEY, Biology.
DR. A. H. BERNHARD, Chemistry.
SUPT. H. D. RAMSEY, Education.
SUPT. J. F. BARNHILL, Mathematics.
DR. C. F. HODGE, Biology.
KENNETH KAUFMAN, Languages.
MRS. MARCIA MENDENHALL, Languages.
ROBERT HART, Physical Science.
DORA OTTO, Domestic Science.
AGNES KOHLSORN, Domestic Science.

Student Assistants.

CARMEN V. LEBLICQ, French.
VERA WHITE, Commerce.
FRANK VIETTI, Commerce.
ERNEST SCHLICHTING, Commerce.
IVA DOLES, History.
CLAUDE O'DELL, Biology.
MARION ENNIS, English.
REVE BREWER, Geography.
GLEN LITTON, Geography.
FAYE BLACKETT, Physical Education.
ELENORA SKOURUP, Mathematics.
HENRIETTA CROTTY, English.
L. L. SUTHERLAND, Biology.

J. H. CAPPERS, Custodian and Head Engineer.
G. F. ROBINS, Janitor.
M. S. WIMAN, Fireman.
WILLIAM SPENDLOVE, Landscape Gardener.

Miscellaneous Information.

LOCATION.

Pittsburg, the metropolis of southeastern Kansas, is located 130 miles south of Kansas City. It has four lines of railroad—the Missouri Pacific, Santa Fe, Frisco, and Kansas City Southern—and over 100 miles of interurban railway. It is second to no other city in the state in its accessibility, with more than twenty passenger trains per day and interurban cars every few minutes.

Pittsburg is a city of 20,000, located in one of the greatest industrial sections of the state. There are hundreds of coal mines surrounding the city in all directions, and millions of tons of coal are mined here annually. The main shops of the Kansas City Southern between Kansas City and Port Arthur, Tex., are located here, employing 2,000 men.

Our population is truly cosmopolitian. At a recent reception to the governor he was greeted in thirty-two different languages. While this is true, they are a loyal people. No war measure came to our city that did not "go over the top."

The State Manual Training Normal School is serving this people and serving the state in training people to go out and serve other sections of the state and world, for our alumni are now serving all over the civilized world.

Pittsburg is also a city of fine homes, paved streets, and one of the finest natural parks in the state. All that she is and all that she has she lays at the feet of the students who attend the State Manual Training Normal School.

MATERIAL EQUIPMENT.

The Normal occupies a campus of fifty-five acres adjoining the city upon the south. This piece of land is admirably situated for our institution. It is being put into condition very rapidly. There are located upon this campus at the present time four splendid permanent buildings, and three large temporary buildings.

RUSS HALL.

This building was erected in 1907 and 1908. It was destroyed by fire in June, 1914, and has been rebuilt and thoroughly equipped. Everything that could be done to make it a more substantial, beautiful and serviceable building has been done. This building now has seventy-five rooms, less the corridors and halls. More than three-fourths of the building is fireproof. Considerable change was made in the exterior and in the interior, especially the top floor, in this rebuilding. Our halls and corridors are beautifully tiled, and the grand stairway at the front entrance, leading to the second floor, is a work of art and beauty, being constructed of the best grade of marble. In this building all academic classes are conducted, together with the domestic science and a portion of the model-school work.

INDUSTRIAL ARTS BUILDING.

This building covers more ground space than Russ Hall. In this building all work in industrial arts, including the work of domestic art, is carried on. It is equipped with the very latest and best machinery that can be had. It is well lighted and ventilated, and furnishes an opportunity for industrial arts work equaled by no other in the West.

POWER AND HEATING PLANT.

The power and heating plant is the third of these permanent buildings. It has been designed and located with a view of using it for heating and lighting the several buildings and others which must soon be gathered about it to carry on the work of the institution.

CARNEY HALL.

For several years the institution has been crowded beyond its capacity in endeavoring to take care of its home economics and science work. Through the generosity of the legislature of 1917, appropriation was made for the purpose of erecting this much-needed science building. This building will house the Home Economics, the Biology and Physical Sciences Departments, together with one of the most up-to-date auditoriums in the state, seating 3,000 people. The laboratories of this building will be equipped with the very best of equipment and open to use by September 1. The outward appearance of this building is most beautiful and the interior arrangement has been made with a view to convenience and utility. The building was named by the legislature as a fitting tribute to the memory of ex-Governor Carney, one of Kansas' early governors. It is the aim of the institution to have space in this building for a permanent collection of historic relics. If you are a friend of S. M. T. N. and have some relics to contribute to this end we shall be pleased to have them.

TEMPORARY BUILDINGS.

AUDITORIUM. Among the temporary buildings is an auditorium, which has a seating capacity of 2,000, with a very large stage capacity. Here also our basket-ball court has been located, which is full regulation size, and one of the best in the state.

CAFETERIA. We have a large temporary building in which the cafeteria is located. Owing to the establishment of an S. A. T. C. at this institution last year, we were compelled to enlarge our cafeteria facilities, and so the temporary wooden building which was used for our business department was added to our former cafeteria, and thus the capacity was very greatly increased. While these buildings are mere temporary structures, they have been fitted up in a most convenient and sanitary manner for the purpose they serve, and we are able to feed a thousand people in these temporary buildings.

The management of the cafeteria is under the direct supervision of the head of the Department of Home Economics, thus insuring the selection and preparation of the best kind of food in the best sort of way for our students.

BOARD AND ROOMS.

Excellent table board may be had at $3.50 to $5.00 per week in private families or in groups.

A cafeteria operated under the management of the College has capacity to accommodate 800 to 1,000 daily. Meals and lunches are served here at approximate cost, ranging from $2.50 to $3.50 per week.

Many teachers find it both pleasant and profitable to take a cottage or suite of rooms, do light housekeeping, and lunch at the cafeteria. By this method the cost of meals may be reduced to as low as $2.50 per week.

Rooms cost, unfurnished, $2 to $5 the month; furnished, $7 to $10 the month, according to size and convenience. Unfurnished houses rent from $6 to $18 the month. It is not necessary to engage rooms before one comes. It is more satisfactory to see the rooms before making definite engagements. An extensive list of suitable boarding and rooming places is kept on file in the library at the school to aid students in securing favorable location. Men and women are not expected to room in the same house. In houses where women students are rooming, suitable arrangements for the use of a parlor for the reception of guests must be made.

STUDENT WELFARE.

No subject is given more serious consideration by the faculty than the physical and moral welfare of its students. While a student may have enjoyed a certain privilege in his home which was considered perfectly proper in one's own home, yet the great responsibility assumed in the care and training of young men and women frequently warrants the faculty in asking the students to give up some special privilege that has been thoroughly proper in his own home which would not be exactly right when living away from home. Women students do not room in houses where there are men lodgers without permission from the Dean for Women and the Rooms Committees.

DEAN FOR WOMEN.

Not only in the matters pertaining to school life, but in all activities which count for general social efficiency, the Dean for Women takes direct interest in the life of every girl enrolled in the institution. Applications for loans from the students' loan fund to women students are usually made through the Dean for Women. Parents will find the utmost courtesy and interest shown by the Dean for Women towards any correspondence which may arise from the solicitude which parents feel when they send their daughters away from home to college.

CHURCHES.

Pittsburg has a fine lot of churches. The leading denominations have well-equipped and beautiful buildings and as fine a lot of ministers as can be found anywhere. These ministers take special interest in the student body and do all in their power to make the very best church environment for students and faculty. A large percent of our faculty are active workers in these churches, holding positions as teachers and superintendents in the Sunday schools, and thus coöperating in this good work. A prominent minister who had been a college president said he considered the moral atmosphere as good here as any school he knew.

BIBLE STUDY.

For ten years a regular Bible-study class has been conducted by Dean Trout. At first this work carried no credit, but for the past three years the work has been regularly scheduled, assignments made and recitations conducted one hour a week. Students have a rare opportunity in this course, as the instructor is a regular graduate of one of the foremost seminaries of the East. The idea is not to teach dogma and doctrine but to lead the student to understand the great social principles underlying the teaching of the Scriptures, and help to an understanding of the fatherhood of God and the brotherhood of man.

SPECIAL COURSES.

A special demand has arisen for some courses bearing upon the social and ethical aspects of our education, and to meet this demand the Department of History and Social Science, whose head had had special training along these lines, has prepared short courses in Old Testament history, New Testament history, the social teachings of Jesus, Christian evidences, and ethics; all of which courses are purely elective and will help to answer many problems arising in the minds of young people who are just beginning their study of science and literature. The institution has been looking after this phase of the training of its students as best it could for the past ten years, and only hopes by an introduction of these courses to serve more efficiently in the years to come.

THE ALUMNI.

Few institutions if any can boast of so large an alumni as S. M. T. N. An institution only fifteen years old with an alumni of 1,480 is something of which we are justly proud. No institution ever had a more loyal bunch than our alumni. They have never failed, either as individuals or groups, or as an association, to do their whole duty toward S. M. T. N. The Alumni Association was organized in 1905 and is engaged in holding reunions at all state and district associational meetings. Where there are sufficient members in any school system they organize S. M. T. N. clubs, and thus make their alma mater felt and appreciated in these communities.

The association holds its annual meetings, at which officers are selected, at the institution on commencement day, at which time a banquet is served. The present officers are: President, Miss Bertha Lance; secretary, Mrs. Fred M. Campbell. The association has members in every civilized country on the globe.

STUDENT ORGANIZATIONS.

ATHLETICS.

Intercollegiate and intramural athletics are carried on by the Department of Physical Education. Intercollegiate athletics are supervised by an Athletic Council composed of five faculty members and five students. The institution is a member of the Kansas Intercollegiate Athletic Conference. Schedules are arranged with other colleges in football, basket ball and track athletics. No intercollegiate schedule is maintained in baseball, but this sport is maintained as an intramural activity.

Interclass and intramural tournaments and leagues are held for both men and women students in basket ball, volley ball and baseball. There are no intercollegiate or interschool contests for women students.

ATHLETIC FIELD.

The facilities for outdoor athletics and general recreation are being improved as fast as funds can be secured for that purpose. The new athletic field, on which three thousand dollars has been expended, has been available for use since the spring of 1918. The plans for the next two years call for the expenditure of $7,000 in the further improvement and extension of the grounds.

The field has a quarter-mile track, with a maximum width of twenty feet, with the inside and outside edges marked with concrete curbs. The track has one coat of cinders. Later more cinders will be added to the cinder path and the whole course drained with tile.

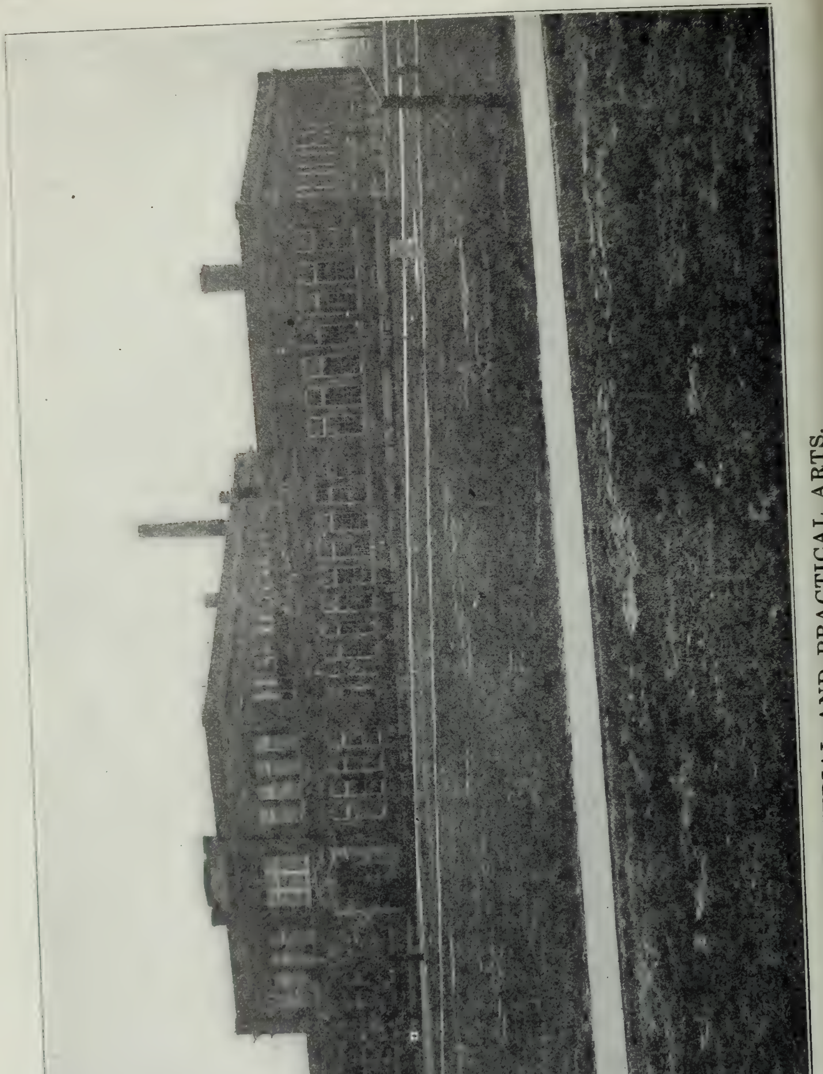
Inside the space marked by the inner curb of the track there is an area 430 feet long by 207 feet wide. The surface of this space is practically level, except for the crowning effect produced by having the middle of the field higher than the edge, which insures good drainage of the playing surface.

Lying to the east of the regular field there is a practice field. It is well drained, so that it can be used in all kinds of weather, thereby saving the sodded surface of the regular field.

Four tennis courts exist for student use. These must be removed from the present location on account of the erection of the new building known as Carney Hall. They will be placed on the new athletic and recreation field.

LITERARY SOCIETIES.

There are two well-organized literary societies, each having a well-furnished and equipped room for its meetings. They are the Manus Verez and Porterean societies. The purpose of the organization is to furnish its members an opportunity to develop along literary lines and make this line of work of value to the community life where they teach. The programs are of a miscellaneous character, combining oratory, music, readings, debates, short stories, and the like. Besides the literary work of these societies, they furnish frequent and splendid opportunities for the development of the social life of the student.



INDUSTRIAL AND PRACTICAL ARTS.

DRAMATIC ART CLUB.

This organization is composed of the students who are especially interested in dramatics, and furnishes an opportunity for the cultivation of the highest type of expression. The organization is for the student and not the student for the organization. The best professional plays, mostly manuscript, are produced in a truly professional manner. The plays are cast not according to the merit of the student but according to his needs. Through this democratic spirit, together with a cultured and refined atmosphere at its monthly meetings and formal banquets, the club has become a very real factor in the life of S. M. T. N.

THE FORUM.

This is a student organization open to all students of S. M. T. N. who desire a knowledge of argumentation and some practice in debate. After the principles of argument, briefing, etc., are set forth by an instructor of public speaking at the beginning of the term, the student proceeds to make their application to various live questions of the day. The club holds its regular meetings on the first and third Tuesdays of the month at seven o'clock p. m. From this club our debate teams are chosen. The officers of this club, together with three members of the faculty appointed by the President of the institution, constitute the Oratorical Council, which has charge of all contests in debate and oratory.

Y. M. C. A.

The Y. M. C. A. has been one of the live and helpful factors of the institution. Until the past year they had charge of the lecture course, which they conducted very satisfactorily. Last fall the introduction of the S. A. T. C. made some change, and a regular Y. M. C. A. secretary was sent here to look after this work for our S. A. T. C. This has been done well. At the time of this writing the S. A. T. C. has just been demobilized and the Y. M. C. A. must readjust itself to the new situation, which it will do, and be in fine order for the new year.

Y. W. C. A.

In all that tends toward the highest intellectual advancement, in all that sweetens true social pleasures, in all that aims towards crowning Christian culture, the Y. W. C. A. is preëminent.

This organization on the campus is ten years old. Why does it live? In a practical way, the Y. W. C. A. assists the Room Committee in helping students locate in the various homes open to student roomers.

A girl's name on the Y. W. C. A. membership roll is equivalent to her entering a service of loyalty and love in any worth-while student activity.

The range of service and fellowship reaching out from the office of Dean for Women is made possible by the untiring coöperation given by the Y. W. C. A. to every activity which concerns the welfare and happiness of the girls of the institution. In a social way, it plans receptions and parties to old and new students. It also gives the annual breakfast to the senior girls. In a spiritual way, it maintains a Y. W. C. A. chapel every Tuesday morning at the assembly hour. A Bible-study class taught by Dean Trout is an inspiration throughout the year.

The officers of the association are: President, Marion Ennis; vice president, Vera White; treasurer, Sara Stephens; secretary, Reve Brewer; chairman of missionary and social service committee, Mary Weems; chairman of social committee, Wilma Scott; advisory board, Dean Mitchell, Miss Nation, Mrs. Shirk, Miss Roseberry and Mrs. Brower.

MUSICAL ORGANIZATIONS.

The principal organizations are the Male Glee Club, Polymnia Club (a girl's organization), the orchestra, and the band. These organizations are very popular, both in the school and outside. They meet regularly twice weekly for rehearsal, and during the school year present several concerts. The active membership of the organization is necessairly limited and is chosen from the best talent of the school.

MUSICAL FESTIVAL.

Each year for the past four years a great chorus has been organized for the purpose of putting on a special week of music festivities. For the past three years we have had as one of the special attractions the Minneapolis Symphony Orchestra.

The music lovers of adjoining cities have organized choruses under the direction of the head of the Department of Music, and these have been merged with our great student chorus and has served in making the annual musical festival second to none in the West.

Last year, in addition to the singing of the Requiem and the Messiah, an artists' concert was given of rare talent. This year one of the biggest star quartets that has ever appeared in this country is to furnish one of the concerts of the week. This quartet is composed of Madame Alda, Madame Lazzari, Mr. Martinelli and Mr. De Luca. You will see at once that students attending this institution have musical advantages of the very highest quality.

THE BAND.

The student body maintains a splendid band under the direction of Prof. Walter McCray, who is well known not only as a musician of rare ability in the direction of all sorts of music, but a specialist as a band leader. This furnishes an excellent opportunity not only for young people who desire to continue their knowledge of band music, but for those who may desire to begin the study of some band instrument.

It may be of interest to the students to know that for the past four years our director has had complete charge of the municipal band of this city and has built up one of the best organizations in the state.

ORCHESTRA.

We have an orchestra under an expert leader. The progress this organization has made since its organization is phenomenal. Student's musically inclined have ample opportunity for the cultivation of their talent.

OTHER ORGANIZATIONS.

AGRICULTURAL CLUB.

This club holds its meetings at noon each Wednesday, and a luncheon is served for 20 cents, and while lunching some one presents a paper or discusses some phase of agriculture. This club has been one of the most successful meeting this year. Practically all students interested in agriculture, and many who are not, attend these meetings.

INDUSTRIAL ARTS SOCIETY.

During the year of 1915 the instructors interested in the industrial subjects, together with a number of students who were likewise interested in these subjects, formed an organization known as the Industrial Arts Society. The purpose of such society, as stated in the constitution, is to encourage the advancement of industrial education by meeting for the discussion of industrial subjects, by the publication of such matters as may be deemed desirable, and by establishing fraternal relations among the friends of industrial education, and by granting the privilege of membership to such students as during their course have given special promise of future achievement.

SCHOOL PUBLICATIONS.

MANUALITE.

The *Manualite* is published monthly during the school year by the students and alumni of the school. There is an editorial staff of eight students, elected annually.

TECHNE.

The purposes of this magazine are: To set forth the distinctive work of the State Manual Training Normal; to publish papers that will be of interest to its readers; to assist teachers to keep in touch with the development in their subjects; to foster a spirit of loyalty that will effect united action among the alumni and former students in promoting the best interests of the institution. The magazine is published every month except August and September. Alumni, teachers and friends of the Normal are invited to send communications on such subjects as fall within the scope of the magazine to the committee in charge. Address communications to The Techne, State Manual Training Normal, Pittsburg, Kan. It is sent free to all alumni and students of the State Manual Training Normal, and to teachers, school officials and citizens on request.

THE KANZA.

For several years the Junior class has had charge of the editing and publishing of the *Kanza*, the annual of the school. This class has brought some excellent books to our student body, and this year will be no exception. The experience gained by those interested in putting out this splendid book is of such a nature that it will serve the student in coming life as a helpful means of understanding the scholarship and mechanical ability required in the preparation of such periodicals, which may serve in a very practical way for them in days to come.

WORKING FOR EXPENSES.

The State Manual Training Normal, being located in a city larger than that of the average state institution, and being also in a district which is thoroughly industrial, a splendid opportunity obtains at all times for many students to earn a part or all of their expenses, by working in homes, stores, factories, offices, garages, etc. In past years hundreds of students have helped themselves in this manner. In truth, some have begun without a week's expenses provided for, and have, by industry and frugality, completed their course and graduated with money in their pockets. We have a faculty committee which coöperates with its students in this matter.

STUDENTS' LOAN.

A movement has been started by the Women's Federated Clubs to assist worthy and needy young people in a financial way. A certain sum will be loaned to approved students at a low rate of interest.

FEES.

All fees except hospital fees are to be paid at the beginning of each semester before admission to class.

HOSPITAL. Each school year, or fraction thereof, all students in the institution pay $1 per year to be used as a fund for the care of the sick. This fee will not be refunded.

NONRESIDENT FEES. Nonresidents will pay, in addition to other fees, a fee of $25 per year, payable in advance, by terms, as follows: $10 per term of twenty weeks; $5 for summer term of ten weeks. These fees will not be refunded.

INCIDENTAL FEE. Each student will pay a fee of $3 per semester, or fraction thereof, and the same for the Summer Session. Students taking work in the sciences, manual training, and other training where a considerable amount of material is used individually, will be charged the actual cost of the material used by them.

CORRESPONDENCE WORK. Students taking work by correspondence pay fees indicated in special correspondence circular.

MUSIC. For fees in the music department see under that head.

EXPRESSION. Private instruction, twenty lessons, $15.

EXAMINATION. Students taking special final examinations pay a fee of $1 for each examination taken. Students regularly enrolled pay the regular examination fee of $1 for the privilege of taking the county examination under the supervision of the officers of the Normal School. No credit is given for certificates of enrollment in county institutes.

HOSPITAL FUND. This fund is provided by the fee of $1 per year paid by all students in the college and secondary courses. It is used to pay salary of the head nurse, for such emergency hospital supplies as are necessary, and for unavoidable expenses required for proper care of the sick. The hospital fund has met with generous approval and has contributed to better general health, and to the comfort of the students.

TYPEWRITER. Students taking typewriting pay a special fee of $1 per semester for the use of machine.

LABORATORY FEE. A small fee to cover cost of material is charged each student pursuing laboratory courses.

THE SUMMER SCHOOL.

THE SUMMER SCHOOL opens immediately after the close of the school year. Practically all courses outlined in this catalogue are given either in full or part during the Summer School. Most of the students are teachers of experience who wish to prepare themselves more fully for their work. Also many teachers desiring to advance the grade of their county certificate may carry such work as they desire to pass county examination in, and thus qualify themselves and at the same time secure credit toward a state certificate. Also, noted educators give special courses and lectures for the benefit of the Summer School students. Owing to the fact that a large number of superintendents of the leading school systems of the state attend our Summer Session, it affords a splendid opportunity for teachers and superintendents to become acquainted.

REGULAR LECTURE COURSE.

Under the direction of a faculty committee a general lecture course is put on each year. This course is not the old time and type of lecture course. It is the policy of the committee to select the very choicest attractions to be had, thus assuring the student body of the very best talent and most desirable things from the standpoint of both entertainment and instruction.

Students are admitted to all these lecture-course attractions on the student activity ticket.

SPECIAL FEATURES.

During the year prominent educators and leaders are invited in to lecture to the student body. The institution also has a very fine motion-picture machine, which furnishes entertainment and instruction along the special lines of work of the various departments.

TEACHERS' APPOINTMENT BUREAU.

The Teachers' Bureau consists of a committee of the faculty, which seeks to place each graduate of the institution in the position best adapted to his qualifications. These qualifications are determined by a careful examination of the student's complete record as shown by his work done, not only in the Training School but also in the various departments of the College. The Bureau seeks in this way to do justice to every student, and is able to give exact and discriminating information to school officials seeking teachers. During the current year the work of the Bureau has been extended to include all graduates of the College teaching in the state, with the view of giving them all possible assistance in advancing their professional interests. Full and confidential information will be sent school officials concerning candidates. It is our policy not to send out general letters of recommendation for indiscriminate use, but to recommend a candidate for the particular position that he is qualified to fill. A large number of the members of the graduating class have had considerable experience in teaching besides that obtained in the Training Department. There are among our students and graduates persons admirably fitted for the various high-school principalships and superintendencies. School authorities are invited to visit the Normal and see the students at work, and make selections of teachers after a personal interview. All letters of inquiry will receive careful attention.

EXTENSION WORK.

The State Manual Training Normal School now has a well-developed and well-organized system of extension work, which is proving of great value to teachers in service and to others contemplating entering the profession. The work is so planned that students outside the institution, under certain limitations, can pursue the same courses of study and receive the same credit as those within the institution. By this means industrious students are enabled to increase their efficiency while in service, and also reduce the time of residence required to secure completion of a course in the institution, but no amount of extension work will be accepted as a substitute for the minimum residence requirement.

The location of the Normal in the center of a network of interurban and steam railways, furnishing students and faculty easy and rapid means of transportation, has greatly contributed to the success of this character of work. During the current year more than 700 students, teachers in service, have received instruction from the institution. Superintendents accept this work in lieu of professional work required, and speak in the highest terms of its value in improving the teaching force of the city or community.

Extension work is offered by three different methods—correspondence work, class extension, and Saturday work.

CORRESPONDENCE WORK.

Where the nature of the subject matter will permit, and where extensive laboratory work is not required, courses of instruction will be offered by correspondence. The student will furnish outlines, with review topics, and furnish such other evidence that the course is mastered as the head of the department may require.

CLASS EXTENSION.

Under this plan classes of twelve or more are organized and a member of the Faculty meets the class regularly every week or every two weeks at the place in which the class is organized. Outlines and reviews are required as in regular correspondence work, with the additional advantage that the student comes in personal contact with the teacher. This character of work is regarded as meeting residence requirements within prescribed limitations. This plan is proving very attractive and effective. Classes in more than thirty cities and towns have been organized the past year.

SATURDAY WORK.

Courses in which laboratory work is required are offered to such students as find it possible to reach the institution on Saturday and spend the day in the laboratories. The laboratories are open and competent instructors are provided for this work.

CREDIT.

The extension courses offered, as outlined above, are identical with the courses offered to students within the institution, and by the same members of the faculty, and the student in extension work meets the same standards and degree of efficiency in his work as the student enrolled in the school, and receives the same credit for his work.

INFORMATION.

A special extension bulletin, giving list of courses, credit offered, limitations of work that can be taken, and other detailed information concerning this phase of work, will be issued early in September of each year. Students interested should write directly to the Registrar for this bulletin.

AMOUNT OF WORK.

No person will be permitted to carry more than four hours per semester by correspondence, class extension, or Saturday work.

LECTURES.

The faculty of this institution has always been ready to coöperate with the superintendents of smaller cities in aiding them to give entertainment to their people. In some instances a complete lecture course has been furnished by our faculty.

In addition to this sort of work we are ever ready to send a speaker to all gatherings of teachers to assist in their work. We want superintendents and teachers to feel free to call on us at any time, anywhere, and they will find a ready response. Our institution touches a large field of advanced educational thought of the most practical sort, and we want to serve you.

EXAMINATIONS FOR ADVANCED STANDING.

Students may, upon good and justifiable grounds, be permitted to take examinations for advanced standing by the permission of the Accrediting Committee and the head of the department in which the examination is to be taken, in such subjects as may be agreed upon, it being understood that no student will be permitted to take such examination as would in any way jeopardize the standing of the institution in its affiliated relations.

Application for advanced standing should be made at the first entrance of the student to the institution. Students who expect to take examinations for advanced standing or submit credits or credentials from other institutions for advanced standing should, if possible, send these credentials and evidences of work completed in other institutions to the Registrar of this institution before the time of enrollment, and thus save themselves a lot of worry and waiting at the beginning of the semester, when they should be classified and enrolled in their class work.

These credentials should be sent two or three weeks before the opening of the semester, that the Accrediting Committee may have opportunity to evaluate them and fix the standing of the student. The Accrediting Committee can give no estimate of the advanced standing of prospective students unless these conditions are complied with.

The committee cannot consider applications for examination for advanced standing which are made later than ten days after matriculation, and if the applicant is permitted to take such examinations, these examinations must be taken not later than the middle of the first semester.

No advanced standing credit will be given for work done during a four-year course of study in a high school, academy or preparatory school. No student will be permitted to take examinations for advanced standing or credit who is carrying the maximum amount of work either by extension, correspondence or residence. The maximum advanced-standing credit for work done in a junior college is sixty hours plus physical training. In no case will work done in a junior college be accredited as the work of the senior college.

All inquiries and correspondence concerning advanced standing should be addressed to J. F. Mitchell, Registrar, Pittsburg, Kan.

ORGANIZATION.

SCHOOL YEAR. The school year is divided into two semesters of approximately eighteen weeks each, the work of the second semester being so arranged that teachers may enter in April, after completing a seven months' terms, and obtain one-half semester credit. There is also a summer term of nine weeks.

ENROLLMENT.

While it is advisable for students who are entering to enroll at the beginning of a semester, they may, upon sufficient reason, enroll at any time. Credit, however, is not assured to those who enroll later than one week after the opening of a semester.

AMOUNT OF WORK THE SEMESTER.

A student of college grade is expected to take not to exceed seventeen credit hours of work the week, for each semester, unless a larger assignment is granted by the accrediting committee.

THE CREDIT HOUR.

For each credit hour of any course in the College the student is expected to devote himself for three hours, either in the classroom, laboratory, or outside preparation.

Degrees, Diplomas and Certificates.

DEGREES.

Students who have attended the State Manual Training Normal School for one year, and who have completed any of the four-year college courses, including at least eight hours of professional work in addition to that required for the life diploma, chosen from junior and senior subjects, will be admitted to the degree of bachelor of science in education, which degree is a life certificate to teach in any elementary or high schools in the state of Kansas.

At least forty hours must be selected from the junior and senior subjects.

No student may offer for the degree more than twenty hours in any subject in which a major is not offered.

No more than eight hours of commerce will be accepted toward a degree.

One hundred twenty-four credit hours of work are required for graduation from the degree course. Four hours of this work are in the Physical Education Department. A credit hour consists of one class period per week in a subject for one semester, except laboratory, drawing, manual and physical training subjects, in which two class periods per week for a semester constitute a credit hour.

No more than four hours college credit of the one hundred twenty-four will be allowed for practice courses in physical education.

LIFE CERTIFICATE COURSES.

Students who have attended the State Manual Training Normal School one semester, and who have met the requirements of the first two years of any of the college courses—which must include English, or Public Speaking, 4 hours; Physical Education, 2 hours; Professional, 14 hours—are entitled to a life certificate for elementary two-year and junior high schools.

KINDERGARTEN CERTIFICATE.

On completion of the kindergarten course—a course of two years, presupposing high-school graduation or its equivalent—a diploma is issued which, in accordance with a law passed by the legislature of 1907, is a certificate valid for kindergarten work in the state of Kansas.

PRIMARY CERTIFICATES.

Those persons completing the two-year primary course will be given a life certificate, also a special proficiency certificate to teach primary work. For outline of course see page 55 of this catalogue.

INTERMEDIATE GRADE TEACHERS' CERTIFICATES.

Those persons completing the two-year grade teacher's course will be given a life certificate, also a special proficiency certificate to teach in the gardes. For outline of course see page 55 of this catalogue.

RURAL TEACHERS' CERTIFICATES.

Those persons completing the two-year rural teachers' course will be given a life certificate, also a special proficiency certificate to teach in the rural schools of the state. For outline of course see page 56 of this catalogue.

JUNIOR HIGH-SCHOOL TEACHERS' COURSE.

This course is planned for those desiring to teach in junior high schools, rural high schools, and the high schools of smaller towns. The present organization of these schools requires teachers well prepared to teach at least two lines of work effectively, and this course is arranged to meet these requirements. Those who meet the requirements will be given a life certificate, also a special proficiency certificate showing the lines of work in which specialization has been made. For outline of course see page 56 of this catalogue.

SPECIAL CERTIFICATES.

SPECIAL LIFE CERTIFICATES TO TEACH IN FOUR-YEAR HIGH SCHOOLS.

The Kansas Legislature of 1915 provided for high-school certificates the following law:

"Each of said institutions (Kansas State Normal School, State Manual Training Normal School, and the Fort Hays Kansas Normal School) shall have power to issue certificates to teach manual training, domestic science, agriculture, commercial subjects, drawing, music, or other occupational subjects, upon the completion of such course of study as may be prescribed by the faculty of said institutions and approved by the State Board of Administration."

In accordance with this act of the legislature, the faculty of this institution has provided special courses for those desiring to teach music, commerce, drawing, physical education in the senior or four-year high schools. They will be issued the special life certificate upon the completion of such courses as are hereinafter outlined in this catalogue.

SPECIAL THREE-YEAR CERTIFICATES FOR FOUR-YEAR HIGH SCHOOLS.

In accordance with the above law the faculty of this institution has provided special courses for those desiring to teach industrial arts, agriculture and home economics. A special certificate will be issued authorizing them to teach such subject or subjects upon the completion of special courses hereinafter outlined in the catalogue, each of which must embrace the following: major subjects, 24; minor subjects, 12; education, 11; physical education, 2; electives, 13.

By minor is meant credit hours in subjects from any other department in which candidate is not necessarily specializing, but which he chooses as his second preference, such arrangement being made to accommodate those who may desire or be required to teach subjects outside of their department.

The choice of this minor should be made upon the advice of the head of the department in which the major is chosen.

In cases where candidates desire to be certificated to teach a minor subject or subjects, the twelve hours designated for such subjects may be considered elective, and may be chosen from any subjects in accordance with courses catalogued.

Special certificates in industrial arts and home economics, and agriculture will be issued for a period of three years, and may be renewed for a period of three years, provided thirty additional hours of college work has been completed, of which eight hours at least must have been selected from that department in which specialization is being made, and four hours in education. The special certificate may be renewed a second time only upon the completion of thirty additional hours of college work, which must be chosen to meet the course requirements of the major, and instead of a special certificate the candidate will then have completed his full college course, and will be issued the bachelor of science degree in education, which will authorize him to teach in any of the public schools of Kansas for life.

TERM CERTIFICATES.

THREE-YEAR STATE CERTIFICATE.

Students who have attended the State Manual Training Normal School one semester and completed thirty-two hours of college work, eight of which are professional, are entitled to a three-year state certificate.

ONE-YEAR STATE CERTIFICATE.

Students completing the Normal High School professional course are entitled to a one-year state certificate. Regular high-school graduates who have attended the State Manual Training Normal School one-half semester and completed eight college hours of work, six of which are professional, are entitled to one-year state certificate.

COUNTY EXAMINATIONS.

Regularly enrolled students of the State Manual Training Normal School may, upon the payment of the usual examination fee of one dollar ($1), present themselves for examination for county certificates, to be conducted under the supervision of the officers of the State Manual Training Normal School, at any time when such an examination is given at any point in the state. The papers in such examination will be sent to any county designated by the applicant, there to be examined by the county board of examiners, who will issue certificates to the successful applicants under the same conditions as if the examination had been conducted under their supervision.

ELECTIVES.

Choice of electives by students should be made upon the advice of the head of the department in which the student is majoring. Students will be held responsible for this requirement.

NUMBERING OF COURSES.

All courses numbered 1 to 50 are open to freshmen and sophomores. Those numbered 51 to 100 are open to juniors and seniors. Any variation from the above will be upon the recommendation of the heads of the respective departments.

In the History Department courses 62 and 65 are open to all classes.

STANDING.

The State Manual Training Normal School is a fully accredited Teachers' College, with membership in the North Central Association of Colleges and Universities. Such affiliated standing is of material advantage to students who desire to enter other colleges or universities. The life diplomas and degrees of the institution are being accepted as state certificates in practically every state in the Union, at least wherever a state will accept a degree or diploma from an institution in lieu of a state certificate.

TRANSFER OF CREDITS BETWEEN THE UNIVERSITY OF KANSAS AND THIS INSTITUTION.

Graduates in the degree courses offering at least 120 hours of college credit, except credit from the following courses, are admitted to the Graduate School of the University of Kansas as candidates for the degree of master of science in education on the following conditions:

At least 40 hours of the 120 hours must be selected from senior college subjects.

A maximum of 30 hours will be accepted in Domestic Art, Domestic Science, and Industrial Arts.

A maximum of 20 hours in Public Speaking and 6 hours in Commerce will be accepted.

Credit not accepted as entrance to the Graduate School for the M. S. degree from the following courses: Bookkeeping, Business Arithmetic, Penmanship, Shorthand, Business English, Typewriting, Dictation and Office Practice, Commercial Correspondence, Business Forms and Spelling, Domestic Art 1*a*, Domestic Science 1*a*, History courses 61 and 65; Music, except in School of Fine Arts, Piano, Voice, Glee Club and Chorus Work not accepted.

The above courses are all considered essential in the preparation of teachers for their work. They are not sufficiently advanced and of such character as to warrant their being presented as entrance credit to graduate schools.

Candidates desiring to enter the University of Kansas who have not completed the degree course of 120 hours will receive credit hour for hour for work done in all courses in this catalogue, except as above specified.

Students desiring to enter the Graduate School of the University for the master of arts degree will be given entrance credit in so far as the courses or degree presented show substantial equivalence to the University's requirements for similar credit.

LIBRARY.

Every student, during his first term in college, should have some instruction in the use of the library; should learn where to find the material and be able to use the index to the library—the card catalogue. He should learn how to use a book in order to find readily the information desired.

While the library serves, first, the faculty and students, it also assists others outside of its immediate vicinity. It is free to all persons for general reference, and a limited circulation is permitted. Great care has been taken by the heads of departments and the librarian to make it a reference library. Students and teachers in high schools are permitted to draw out material for debates, essays, and school entertainments, and books may be taken out for use in extension classes. Great freedom is given in the matter of taking out books and other material for study, but students are expected to comply with the regulations controlling such privileges.

The books are classified according to the Dewey decimal system. They are arranged on the shelves in numerical order, those having the same class number arranged alphabetically. The card catalogue is a dictionary catalogue. It contains an author card for every book in the library, a subject card for most of the books, and a title card when the title is a distinctive one.

RULES AND REGULATIONS.

Hours: 8 to 5, 6 to 9; Saturdays, 9 to 12, 2 to 5.

All books, except those checked out for two weeks, must be returned by 8:10 the next morning. Special permission may be given to keep a book out for a longer period, provided it will not be needed in the library. The librarian should be informed of the purpose and length of time desired, otherwise the book will be counted overdue if not returned in the morning. Books drawn out on Friday should be returned on Saturday, unless permission is given to keep them until Monday morning. Books on reserve should not be taken from the library before five o'clock.

Periodicals may be drawn for home use. The current number should not be taken from the library before five o'clock and must be returned by 8:10 in the morning. Other numbers of the periodicals may be drawn out for a longer period.

All students are entitled to the full use of the library. No books or periodicals must be taken from the library until charged at the Librarian's desk. Books lost or damaged must be replaced.

LIBRARY METHODS.

This course is given one hour per week during the first four weeks of each semester and is required of all college freshmen. The purpose of this course is to teach students how to use any well-organized collection of books in a systematic and intelligent manner. Instruction in the classification and shelf arrangement of the books, the use of the card catalogue, general and special reference books, and magazine indexes is given. Many students waste valuable time in a library because they do not know how to quickly find the information they seek. The application of the principles taught in this course will prevent this loss of time.

S. M. T. N. IN THE WORLD WAR.

It is difficult to know just the extent in which S. M. T. N. participated in the great World War, but so far we have data showing that 496 former students and faculty members of this institution were actively engaged either in the training camps or across the seas; that in addition to these we had nearly 300 young men in our S. A. T. C. Out of the number of former students who were actively engaged in the service of their country we have the distinction of having two majors, two captains, fifteen first lieutenants, twenty-six second lieutenants, nineteen corporals, two sergeant majors and twenty-three sergeants.

The sad part of it is that up to date we know that many were wounded, seven of whom were killed outright or died of wounds, and six others died of disease, and one missing. We do not know how many of our brave fellows were wounded, but we are proud of all of them. They were as true to the flag of their country as they had been to the crimson and gold, and we shall be pleased to place the laurel leaves of victory upon their brows and to stand at attention in their presence when we may have the opportunity and privilege.

In addition to this number of worthy fellow students and faculty members, S. M. T. N. has been liberal in furnishing members of its faculty and student body to carry on war work and to contribute of their money for the war enterprises; but however much we may have done who stayed at home, we should feel that the 496 that left home and friends and school deserve our undying love and appreciation.

S. A. T. C.

In common with other institutions of learning in the United States, the State Manual Training Normal was the school home of a group of young men in active training for service at the front as members of the army of the United States. These young men, 244 strong, constituted the Normal's section of the Students' Army Training Corps. Their barrack stands on the south side of the campus; the campus and the athletic field were the drill ground.

The S. A. T. C. was organized at the opening of the school term. It was taken into the service of the federal government October 1 by an impressive ceremony on the athletic field, on which occasion ex-Governor Hodges, of Olathe, was the principal speaker.

Besides the daily military drill and the constant military regimé, the men of the S. A. T. C. had also a regular program of academic studies. All their studies were so chosen and directed as to enhance the value of the men later in military service—in fact, fit them for commissions. The men were members of the regular college classes, on the same footing as the other students when in the class room.

DAY TRADE CLASSES.

Under the provisions of the Smith-Hughes act, unit trade classes in automobile mechanics and machine shop practice are going, and other classes are being planned. In conformity with the provisions of the federal act, the students in these classes spend three hours, or 50 percent of the time, in the shop upon productive work, and 25 percent of the time upon some related subject, as related science, related mathematics, and related drawing. The remainder of the time may be devoted to either vocational or nonvocational subjects.

EVENING VOCATIONAL COURSES.

Courses covering a variety of vocational work are offered in the evening classes. Our extensive and splendidly equipped shops and laboratories afford unexcelled opportunities for those who work for their living during the day. The work is directed and taught by the regularly employed faculties, assisted by the most thorough and practical men obtainable from the industries. Many men are being attracted to this work, because they find it an exceptional opportunity to add to their everyday working efficiency. At this time classes are organized in electrical work, such as electrical machinery, automobile electricity, armature winding and telegraphy; steam engineering, mining, drafting, machine-shop practice, automobile mechanics, and commerce.

VOCATIONAL TEACHER TRAINING.

The State Manual Training Normal has been designated, with the approval of the Federal Vocational Board, to maintain courses to train men to teach in the state and federal-aided vocational schools under the federal act known as the Smith-Hughes bill. This will afford a large number of men who are now engaged in the industries an opportunity in both day and evening classes to fit themselves for these attractive positions.

IN MEMORIAM.

No true life attains its ideal, yet in a long life one may come closer to the goal. When the closing cycle of life reaches old age, there is regret, loneliness and sorrow; but when in early life death comes to those whose faces are turned toward a world of duty and love and service, there is deepest sadness and lasting regret.

In this simple and yet sincere way we record our love and honor to the three noble young people from our student body who fell victims to the dreadful epidemic which passed over our country this year, and the one who was killed by a mine explosion. All were Christian young people, ready to enter the valley of the great shadow, yet whose earnest preparation for a fuller measure of life enriched all life in purity, unselfishness and self-sacrifice.

During the illness and death of each, the parents were in constant attendance, and the sympathy of the entire student body went out to the bereaved one as they journeyed back to the old home to lay tenderly to rest those whose very lives have been a message of love and hope and happiness.

Miss Isabel Lucina Godden (member of Sophomore class), the daughter of Mr. and Mrs. W. K. Godden, of Caney, Kan., was born April 29, 1898, and died December 2, 1918. She lies buried at Caney, Kan.

Miss Iona Faye Courtney (member of Freshman class), the daughter of Mr. and Mrs. O. D. Courtney, of Savonburg, Kan., was born November 21, 1898, and died January 9, 1919. She lies buried at Leanna, Kan.

Sherman Jeffers (member of S. A. T. C.), the son of Mr. and Mrs. George Jeffers, of Bayliss, Ill., was born October 7, 1898, and died December 14, 1918. He lies buried at Bayliss, Ill.

William Webb was born August 13, 1890, and lost his life in a mine explosion November 2, 1918. He was a member of the Junior Class. He lies buried at Pittsburg, Kansas.

IONA FAYE COURTNEY. SHERMAN JEFFERS.
WILLIAM WEBB. ISABEL LUCINA GODDEN.

Normal College.

Admission.

1. High-school graduates presenting fifteen or more approved units or credits will be admitted, without examination, to the first year of the Normal College course. (A unit is one year's high-school work, five periods per week, two periods of laboratory or shop work counting as one.)

2. Students of maturity having at least thirteen (13) units of high-school work may be admitted conditionally to certain prescribed courses.

All students should present transcript of all grades made prior to their entrance here. This includes high-school work, work done in other institutions, and teacher's certificates.

Outline of Courses by Years.

The figure immediately after the subject indicates the number of the course; explanation of the work in the subject is found under this number in the later pages of this catalogue. The other figures indicate the number of semester-hours' credit given for the course.

INDUSTRIAL ARTS COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work *	4	Shop Work	4
Drawing †	2	Drawing	2
Trigonometry or Ind. Math.	2	Psychology	3
English	4	Elementary Surveying	2
Physical Education	1	Physical Education	1
Electives	3	Electives	4
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Principles of Education	3	Modern Education	3
Ind. Physics	4	Ind. Physics	2
Electives ‡	2	Electives ‡‡	4
	15		15

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* Not less than 16 hours of actual shop work in the departmental major is required for Life Certificate. Not less than 16 hours of actual shop work in the departmental major, nor less than 4 hours in the other material, is required for special Industrial Arts Certificate. Not less than 24 hours of actual shop work in the departmental major, nor less than 8 hours in the other material, is required for the degree.

† The drawing to be taken is determined by the shop course selected and is specified by the department.

‡ Those working for the special Industrial Arts Certificate will elect the course in Departmental Organization and Management.

‡‡ Practice teaching shall be considered as an elective.

JUNIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Industrial History	3	History of Ind. and Vocational Ed.	3
Education	2	Economics	3
Mechanism	2	Electives	4
Electives	3		
	16		16

SENIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Education	3	Sociology	3
Strength of Materials	2	Survey of Industries	2
Physical Education	1	Physical Education	1
Electives	3	Electives	3
	15		15

A student majoring in Industrial Arts may elect either woodwork or metal work as his departmental major, but should advise with the department before making a choice.

HOME ECONOMICS. (Course I.)

MAJOR—DOMESTIC ART.

Degree ....D. A. 30 hrs.; D. S. 10 hrs. Life Certificate ....D. A. 16 hrs.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Domestic Science (1)	3	Psychology	3
Domestic Art (1)	3	Domestic Art (2)	3
Chemistry * (1)	5	Domestic Science * (2)	3
English (1)	4	Physiology	4
Physical Education	1	Drawing (5)	2
		Physical Education	1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Domestic Art (3)	4	Domestic Art (6)	4
Domestic Art (4)	2	Drawing (26)	2
Theory of Teaching (D. A. 5)	2	Teaching	3
Drawing (9)	2	Modern Education	3
Principles of Education	3	Domestic Art (7)	2
Elective	2	Elective	1
	15		15

JUNIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Domestic Art (51)	4	Domestic Art (52)	2
Chemistry (60 and 61) (Tex. and Household)	4	Drawing (22)	2
History (51) (Indus.)	3	Education	3
Drawing (25)	2	Electives	8
Physical Education (3)	1	Physical Education	1
Electives	2		
	16		16

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* (1) Students not offering a unit of chemistry from high school will be required to take it in this course.

* (2) Students wishing a three-year certificate must substitute teaching and general methods for domestic science 2.

SENIOR YEAR.

First Semester:	hrs.
Domestic Art (53)	4
Household Physics	2
Teaching	3
Electives	3
Education	3
	15

Second Semester:	hrs.
Domestic Art (54)	4
Sociology (58 and 68)	5
Electives	6
	15

HOME ECONOMICS. (Course II.)

MAJOR—DOMESTIC SCIENCE.

Degree ....D. S. 30 hrs ; D. A. 10 hrs. Life Certificate...D. S. 16 hrs.; D. A. 8 hrs.

FRESHMAN YEAR.

First Semester:	hrs.
Domestic Science (1)	3
Domestic Art (1)	3
Chemistry	5
English	4
Physical Education (1)	1
	16

Second Semester:	hrs.
Psychology	3
Domestic Art (2)	3
Drawing (5)	2
Domestic Science (2)	3
Biology (Physiology)	4
Physical Education (2)	1
	16

SOPHOMORE YEAR.

First Semester:	hrs.
Domestic Art (3)	4
Domestic Science (3)	1
Chemistry of Foods (5)	3
Teaching	3
Principles of Education	3
Methods Special (D. S. 4)	2
	16

Second Semester:	
Domestic Science (5)	4
Bacteriology (3)	4
Modern Education	3
Electives in Domestic Science	2
General Electives	2
	15

JUNIOR YEAR.

First Semester:	hrs.
Domestic Science (51)	2
Biology (53 and 54)	4
Household Physics	2
Physical Education (6*a*)	1
Electives	5
Drawing 25	2
	16

Second Semester:	hrs.
Domestic Science (52)	2
Sanitation and Water Supply *	2
Drawing (22)	2
Chemistry (62 and 63)	4
Electives	3
Physical Education (6*b*)	1
Biology (68)	2
	16

SENIOR YEAR.

First Semester:	hrs.
Domestic Science (53)	4
Education	3
Teaching	3
Electives	5
	15

Second Semester:	hrs.
Domestic Science (54)	2
Sociology (58 and 68)	5
Education	3
Electives	5
	15

The following course is offered for the training of teachers in accordance with the Smith-Hughes act.

FRESHMAN YEAR.

First Semester:	hrs.
Elements of Cookery	3
General Chemistry	5
Biology	3
Household Physics	2
Principles of Design	2
Physical Training	1
	16

Foods and Cookery	3
Clothing	3
Chemistry (Qualitative and Quantitative	2
Physiology	4
Psychology	3
Physical Training	1
	16

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* This course may count as domestic science.

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Home Cookery and Table Service	2	Dressmaking	4
Clothing (2)	3	Textiles	3
Costume Design	2	Practice Teaching	2
Home Economics Education	2	Bacteriology	4
Organic Chemistry	3	Modern Education	3
Constructive English	4		
	16		16

JUNIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Experimental Cookery	2	Dietetics	4
Draping and Designing	2	Home Nursing	2
Chemistry of Food and Nutrition	5	Advanced Dressmaking	3
Nutritional Physiology	2	House Planning and Decoration	2
Civics	3	Education (elective)	3
Physical Training	1	Physical Training	1
	15		15

SENIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Care of Children	2	Household Management	2
Infant's Layette	2	Practice House	2
Sanitation and Public Health	2	Practice Teaching	3
Economics	3	Sociology	3
American History	2	English Literature	4
Principles of Vocational Education	3	Elective	1
Elective	1		
	15		15

GENERAL COURSE.

For the preparation of high-school teachers majoring in Biology, English, Education, Foreign Languages, History, Mathematics, or Physical Sciences.

Students expecting to receive a Life Certificate at the end of the second year of this course must offer at least 16 hours and not more than 20 hours in his major, 12 hours in a minor, 14 hours Education, 4 hours English, 2 hours Physical Education, and not more than 8 hours in any other department.

FRESHMAN YEAR.

**First Semester:*	*hrs.*	*Second Semester:*	*hrs.*
Biology	3 or 5	Psychology (2)	3
Chemistry	2 or 5	Major	2, 3, or 5
English	4	Physical Education (2)	1
Foreign Language	3 or 5	Electives	7, 9, or 10
History	2, 3, or 5		
Mathematics	2, 3, or 5		16
Physiography	3 or 5		
Physical Education	1		
	16		

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Elementary Education	3	Modern Education	3
General Methods (4)	2	Major	2, 3, or 5
Major	2, 3, or 5	Electives	7, 9, or 10
Electives	5, 7, or 8		15
	15		

JUNIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Education	5	Major	2, 3, or 5
Major	2, 3, or 5	Electives	10, 12, or 13
Physical Education (6*a*)	1	Physical Education (6*b*)	1
Electives	5, 7, or 8		16
	16		

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* Elect 16 hours, one of which must be physical education.

SENIOR YEAR.

First Semester:	*hrs.*
Teaching	3
Major	2, 3, or 5
Electives	7, 9, or 10
	15

Second Semester:	*hrs.*
Major	2, 3, or 5
Electives	10, 12, or 13
	15

Courses of instruction are organized into ten groups, with special emphasis on a different subject called the major subject in each group. A course comprising two years' work is provided for those preparing for grade positions. Thirty semester hours of work in a subject constitute a major in that subject. Students wishing to graduate from the degree course must elect one of the groups not later than the Junior year.

COURSE GROUPS.

1. INDUSTRIAL ARTS:	*hrs.*
Industrial	40
Professional	22
English	4
History	9
Mathematics	8
Physical Sciences	6
Physical Education	4
Drawing	16
Elective	15

2. DOMESTIC SCIENCE:	*hrs.*
Domestic Science	30
Domestic Art	10
Professional	22
Biology	14
Physical Sciences	14
English	4
History	5
Physical Education	4
Elective	21

3. DOMESTIC ART:	*hrs.*
Domestic Art	30
Domestic Science	10
Professional	22
Biology	4
Chemistry	9
English	4
History	8
Physical Education	4
Drawing	10
Elective	23

4 BIOLOGY:	*hrs.*
Biology	30
Professional	22
English	8
History	8
Mathematics	4
Physical Sciences	8
Physical Education	4
Elective	40

5. PHYSICAL SCIENCES:	*hrs.*
Physical Sciences	30
Professional	22
Biology	8
English	4
History	8
Mathematics	8
Physical Education	4
Elective	40

6. HISTORY:	*hrs.*
History	30
Professional	22
Biology	8
English	12
Mathematics	4
Physical Sciences	8
Physical Education	4
Elective	36

7. ENGLISH:	*hrs.*
English	30
Professional	22
Biology	8
History	12
Mathematics	4
Physical Sciences	8
Physical Education	4
Elective	36

8. MATHEMATICS:	*hrs.*
Mathematics	30
Professional	22
Biology	4
English	4
History	8
Physical Sciences	8
Physical Education	4
Elective	44

9. FOREIGN LANGUAGE:	*hrs.*
‡Language	30
Professional	22
English	12
*History	8
Mathematics	4
Physical Sciences	4
Biology	4
Physical Education	4
Elective	36

10. PROFESSIONAL TRAINING:	*hrs.*
Professional Training	30
History	8
Physical Science	10
Biology	10
English	9
Physical Education	4
†Elective	47
Teaching	6
Mathematics	3
Public Speaking	3

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* The history chosen should be parallel to the language studied.

† At least 20 hours in some department.

‡ Not including Latin 1 or 2, Spanish 1, or French 1.

Life Certificate Courses.

The following courses are outlined for those students seeking a life certificate to teach in some special field of elementary school work. Candidates for these courses must offer at least 15 units of high-school work, or its equivalent, for entrance requirements.

KINDERGARTEN COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
English	4	General Psychology	3
Physiology	3	Teaching	4
Elementary Drawing	2	Public-school Music	2
Introduction to Education	3	Stories and Literature	2
Physical Education	1	Primary Geography	2
Elective	3	Physical Education	1
		Elective	2
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
American History	4	Modern Education	3
Elementary Arts	2	Child Psychology	2
Primary Methods	2	Nature Study	2
Primary Teaching	3	Kindergarten Theory	3
Elective	4	Elective	5
	15		15

PRIMARY TEACHERS' COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
English	4	General Psychology	3
Physiology	3	Primary Methods	2
Introduction to Education	3	Public-school Music	2
Primary Drawing	2	Nature Study	2
Physical Education	1	Elementary Arts	2
Elective	3	Physical Education	1
		Elective	4
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Child Psychology	2	Modern Education	3
American History	4	Primary Geography	2
Teaching (Kindergarten)	3	Stories and Literature	2
Science	2	Primary Teaching	3
Elective	2	Play and Playground	2
Primary Methods	2	Elective	3
	15		15

INTERMEDIATE TEACHERS' COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
English	4	General Psychology	3
Physiology	3	Physiography	3 or 5
Industrial Art	2	Grade Methods	2
Introduction to Education	3	Public-school Music	2
Physical Education	1	Industrial Art	2
Elective	3	Physical Education	1
		Elective	3 or 1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
History	4	Mathematics	3
Nature Study	2	Modern Education	3
Teaching	3	Playground	2
Methods	2	Nature Study	2
Electives	2	Grade Methods	2
Science	2	Elective	3
	15		15

RURAL TEACHERS' COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
English	4	Psychology	3
Rural Education	3	Physiology	3
Nature Study or Geography	2	Rural Agriculture	2
El. Wood Work or Home Econ.	3	Methods	2
Physical Education	1	Playground	2
Elective	3	Elective	3
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
General Science	2	American History	4
Mathematics	3	Rural Education	3
Rural Sociology	2	Home Economics	3
Public School Music	2	Arts and Crafts	2
Elective	3	Elective	3
Rural Teaching	3		
	15		15

Students who are not high-school graduates, having taught successfully for five years and holding a First-grade County Certificate, on entering may receive a Three-year Certificate on completion of the first year of the Kindergarten, Primary, Intermediate Grade Teachers' or Rural Teachers' courses and eight additional hours, or a Life Certificate on completion of the two-year courses above mentioned and sixteen additional hours chosen from the following subjects:

	hrs.		*hrs.*
General Chemistry	4	General Biology	4
German or French	8	History	4
Sociology	4	Economics	4
Mathematics	4	Home Economics	8
Industrial	8	Agriculture	4
Commerce	4	Education	4
Physiography	4		

JUNIOR HIGH SCHOOL OR DEPARTMENTAL TEACHING.

GENERAL REQUIREMENTS.

	hrs.
English	4
Education	14
Physical Education	2
	20

COURSE REQUIREMENTS.

A major group of 10 hours each from any two subjects in which a major is offered:

	hrs.	
English	10	20
History	10	
Biological Science	10	
Physical Science	10	
Mathematics	10	
Languages	10	
Household Economics	10	
Industrial Arts	10	

A minor group of 12 hours selected from the following:

	hrs.	
Grade Methods	4	12
Play and Playground	2	
General Science	2	
Elementary Sociology	3	
Public Speaking	3	
Geography	3 or 5	
Advanced Civics	3	

AGRICULTURE COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
General Agriculture	3	Agronomy	5
English	4	Psychology	3
Biology I	3	Elementary Education	3
Manual	4	Biology II	3
Physical Education I	1	Physical Education	1
	15		15

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Soils and Fertilizers	5	Agriculture	4
Animal Husbandry	3	Teaching	3
Chemistry	5	Modern Education	3
Methods	2	Genetics	2
Elective	1	Electives	4
	16		16

INDUSTRIAL PHYSICS COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Chemistry	5	Psychology	3
Industrial Mathematics	3	Plumbing and Pipe Fitting (Physics 15)	2
Physical Education (1)	1	Physical Education (2)	1
Electives	7	Electives	8
	16	Gas Engines (17*a*)	2
			16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Elementary Education	3	History of Education	3
General Methods	2	Gas Engine (Electricity 18*b*)	2
Physics (16), Electric Wiring	2	Physics (2), Electric Wiring	2
Physics (18)	4	Teaching	3
Electives	4	Electives	5
	15		15

PUBLIC SPEAKING AND EXPRESSION.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Expression (3)	3	Public Speaking (2)	5
Public Speaking (1)	3	Literary Interpretation (4)	2
Physical Education (1)	1	Physical Education (2)	1
Electives	9	Electives	8
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Expression (5)	2	Masterpieces (54)	3
Literary Interpretation (6)	2	Parliamentary Law	2
English	3	Electives	10
Electives	8		15
	15		

Students who are high-school graduates, or equivalent, upon completion of the above course, and who elect 14 hours of Education are entitled to a Life Certificate. To these students the department advises course 9 in place of Public Speaking I. Students expecting a Life Certificate at the end of the second year must offer at least 16 hours and not more than 20 hours in this department; 12 hours in a minor, and not more than 8 hours in any other department.

Special Life Certificate Courses.

DRAWING SUPERVISION.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Elementary Arts (3*a*)	2	Elementary Arts (3*b*)	2
History of Art (2)	1	Elementary Design (5)	2
Elementary Drawing (1)	1	History of Ornament (6)	1
English or Public Speaking	4	Charcoal (17)	1
Management (1)	2	Clay Modeling	2
Drawing (10)	2	Psychology (2)	3
Physical Education (1)	1	Electives	4
Electives	3	Physical Education (2)	1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Advanced Arts (8*a*)	2	Applied Design (10)	2
Advanced Arts (8*b*)	2	Art Appreciation (11)	2
Theory of Color (9)	2	Water Color (12)	2
Woodwork	2	Organization of Drawing	2
Drawing (24) or (26)	2	Teaching	2
Teaching	2	Electives	5
Electives	3		
	15		15

Required for Life Diploma in Drawing Supervision. Those who have not graduated from an accredited high school, or who are unable to show proficiency by credits from institutions of higher learning, or grades by examination in the following branches, will be required to take the same in addition to the above: Physiology 4 hours, History 4 hours, Elementary Science 4 hours, Agriculture 4 hours, Rhetoric and Composition 4 hours.

COMMERCE COURSE.

FRESHMAN YEAR.

Students who are high-school graduates or equivalent, upon completion of the course in Commerce, and who elect Psychology 3 hours, Methods 2 hours, Modern Education 3 hours, Practice Teaching 3 hours, and Elective 3 hours in Education, will be entitled to a Life Certificate in Commerce. Those who do not desire a Life Certificate in Commerce, see course on page 64. Students pursuing degree courses may elect 8 hours of commerce work.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Bookkeeping (1)	5	Bookkeeping and Accounting (2)	5
Algebra (3*a*)	2	Theory of Investment (10)	2
Commercial Geography (6)	3	Business Law (3)	2
Penmanship (4)	1	Penmanship (5)	1
Electives	4	Parliamentary Law (61)	2
Physical Education	1	Electives	3
		Physical Education	1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shorthand (6)	5	Dictation and Office Practice (7)	5
English (1)	4	Epic (2)	4
Commercial Methods (10)	1	Salesmanship (11)	2
Typewriting (8)	2	Typewriting (9)	2
Electives	4	Electives	3
	16		16

MUSIC SUPERVISORS' COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Expression	3	History of Music (1 day)	2
Sight Singing (4 days)	2	Psychology	3
History of Music (1 day)	2	Voice	2
Voice	2	Piano	2
Piano	2	Harmony (2 days)	2
Physical Education (1)	1	Teaching 5, Lectures (1 day)	2
Teaching 5, Lectures (1 day)	2	Physical Education (2)	1
Harmony	2	Conducting	2
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Voice	2	Voice	2
Piano	2	Piano	2
Harmony	2	Counterpoint	2
Electives	1	Chorus and Orchestra Conducting	2
Orchestration	2	Modern Education	3
Chorus and Orchestra Conducting	2	Electives	1
Special Methods	2	Teaching	3
Management	2		
	15		15

PHYSICAL EDUCATION.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Biology	3	Biology (2)	3
English (1) or Public Speaking (1)	4	Chemistry	5
History (2 or 1 and 2 or 3 and 4)	4	History, or Sociology (58) (68)	5
Chemistry (1)	5	Psychology	3
Physical Education (1)	1	Physical Education (2)	1
	17		17

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Biology	5	Biology (Physiology)	4
Methods and Management	4	Modern Education	3
Physical Education (8)	3	Teaching	3
Physical Education (3)	2	Child Psychology	2
Physical Education (6*a*)	1	Physical Education (4)	2
		Physical Education (6*b*)	1
	15		15

Outline of Courses.

Biological Sciences.

Professor O. P. DELLINGER.
* Associate Professor W. E. RINGLE.
Associate Professor B. W. SCHEIB.
† Assistant Professor FRED DONAGHY.
Assistant Professor RICHARD SIGLER.
Instructor UNA PEASE.
Instructor LENA MARTIN SMITH.

There has developed within recent years a demand for better and more universal biological instruction. With the introduction of agriculture and domestic science into our schools, a knowledge of biology is demanded of a much larger number of individuals. For a long time biology was taught for its general cultural value or in its application to medicine; and to-day most of the courses in colleges and universities, and in some normal schools, are organized to meet the needs of the general student or the student of medicine. Teachers of biology have failed to realize that the mass of biological instruction from now on must be largely designed for students in agriculture, domestic science, education, and medicine, and the courses must be so constructed as to meet the special needs of these students.

It is the plan and purpose of the Department of Biology to offer instruction in biology as it applies to these fields; and many of the courses organized are especially for the student of domestic science, agriculture, or education. There are, however, a few courses of a general nature, but they are fundamental to any education.

The department is moving into new quarters, consisting of eleven rooms given over to laboratories, lecture rooms and offices. The laboratories are to be newly equipped with the most modern of apparatus and appointments. The department already has forty new compound microscopes, with fifteen oil immersions, dissecting microscopes, prepared microscopic slides for histology, embryology and bacteriology, also several hundred lantern slides. The incubators, sterilizers and glassware for cultural work in bacteriology are most complete. For the nature-study work we have an acquaria and vivaria for living specimens, also a very complete collection of material, made by extension students and donated to the department, illustrating nature-study work in the grades.

The new laboratories will have desks equipped with water, gas, electricity and a complete refrigerating outfit. We will be equipped to do in a very effective way the laboratory work of public health, bacteriology, physiology histology, nature study, botany and zoölogy. The School has thirty-five acres on which are large ponds, garden plots, agricultural plots and demonstration areas for the use of students, where they become acquainted with a great many of the native plants and animals and natural habitat.

Course 1.—GENERAL BIOLOGY. This course is an introduction to the other biological sciences, and aims to acquaint the student with the elementary forms and forces of living nature. Here the student gets his first glimpses of the laws of evolution and heredity as they apply to human progress. Much attention is paid to the evolution of conduct of life. Types for study are selected as far as possible from the common animals. Three hours credit. Laboratory fee for material used.

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* On leave of absence as regional, educational superintendent with the Y. M. C. A. in France.

† On leave of absence in the U. S. Army.

Course 2.—GENERAL BIOLOGY (continued). In this course the student studies the laws of growth and reproduction of living organisms as they are illustrated in plants. Here emphasis is given to the economic phases of botany. Plants are studied in their relation to medicine, textiles, lumber, ornamentation and food production. Attention is given to propagation and distribution. Three hours credit. Laboratory fee for material used.

Course 3.—INVERTEBRATE ZOÖLOGY. In this course a series of forms representative of all the phyla of the invertebrates are studied. The emphasis is placed on morphology, life history and behavior. Prerequisite, course 1 or its equivalent. Five hours credit. Laboratory fee for material used.

Course 4.—VERTEBRATE ANATOMY. A study of the comparative anatomy of a few representatives of the vertebrate. Dissection of one or two types from each group constitutes the laboratory work. Prerequisite, course 1. Five hours credit. Laboratory fee for material used.

Course 5.—MORPHOLOGY OF THALLOPHYTES AND BRYOPHYTES. A course in which the morphology, classification and genetic relationships of groups of plants representative of the algæ, fungus, moss and liverworts are studied. Some attention is given to collection and preserving of the representatives of these groups in the country about the Normal. Prerequisite, course 2 or its equivalent. Five hours credit. Laboratory fee for material used.

Course 6.—MORPHOLOGY OF PTERIDOPHYTES AND SPERMATOPHYTES. A continuation of course 5, into the higher groups of plants. Special attention will be given to life histories and classifications. Prerequisite, course 2 or its equivalent. Five hours credit. Laboratory fee for material used.

Course 11.—HUMAN PHYSIOLOGY. The purpose of this course is to teach those things that will enable the student to make of his or her body, and also the bodies of those they minister to, the most efficient mechanism possible. The requirements of the body as to food, exercise, sleep, fresh air, bathing, etc. The physiological requirements of children, where they differ from the adult, will be emphasized. The physiology of reproduction will receive the attention it deserves. Daily for twenty weeks. Four hours credit. Laboratory fee for material used.

Course 12.—PHYSIOLOGY AND HYGIENE. This is a course designed especially for grade and rural school-teachers, covering the principles of physiology and hygiene. Special emphasis is laid on ventilation, foods, play, eye and ear hygiene, and those phases of the subject which are of interest to every grade school-teacher. Three hours credit. Fall and summer terms.

Course 14.—APPLIED BIOLOGY I—NATURE STUDY. This course is designed especially for primary and grade teachers. It attempts to answer the question, What knowledge of living forms is adapted to children between the ages of six and fifteen? A review of the literature in this field is also given. Four hours credit.

Course 15.—APPLIED BIOLOGY II—ELEMENTARY AGRICULTURE. The principles of vegetable gardening, fruit growing, landscape gardening, forestry, and the elements of animal husbandry form the basis of this course. Two hours credit.

Course 16.—GENERAL BACTERIOLOGY. This course is required of all students who major in domestic science or agriculture, and is open to any student in the college course. It is a general introductory course consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit. Fall, spring and summer terms. Laboratory fee for material used.

Course 17.—Hygiene and Public Health. A course in elementary bacteriology designed especially for grade and rural teachers. The course is a general survey of the field of bacteriology as it relates to civic and school sanitation, agriculture and the preservation of foods. The student becomes familiar with immunology and the physiological factors involved in the natural resistance to disease. Three hours credit. Fall and summer terms.

Course 18.—Vocational Hygiene and Sanitation. A course designed especially for the students in industrial arts. The principles of hygiene and sanitation as related to the industries and the men in industrial work form the basis of this course. One hour credit. Spring and summer terms.

Course 51.—Household Bacteriology—Home Sanitation. Bacteria, mold, mildew and yeasts are studied and the part they play in cooking and canning discussed. Bacterial diseases will receive attention, and rules for the use of disinfectants and antiseptics will be given. The simple treatment of wounds will have a place. Required of all domestic science students. Two hours credit.

Course 52.—Agricultural Bacteriology. Bacteriology as applied to the activities of the farm. Special attention will be given to soil and dairy bacteriology. Required of all agriculture students. Two hours credit. Spring and summer terms.

Course 53.—Genetics. The course is especially designed for domestic science students, but is open to all students of college grade. A careful review of the literature on heredity and eugenics is given, together with a study of the law of reproduction. Two hours or four hours credit.

Course 54.—Histology. This is a laboratory course in which the student is given an opportunity to make preparations of the animal tissues and to study their microscopical structure. Four weeks is devoted to the chick embryo. Two or four hours credit. Laboratory fee for material used.

Course 55.—Embryology. The development of the germ cells, fertilization, the differentiation of the germ layers, and the growth and development of the systems and organs are studied in this course. The laboratory work consists of mounting and studying a series of sections of chick, pig and turtle embryo. Three hours credit. Fall and summer terms. Laboratory fee for material used.

Course 61.—Plant Physiology and Pathology. This is the study of the principal life functions of plants, such as photosyntheses, respiration, transpiration, growth and reproduction. The diseases of the orchard, farm and garden plants are studied in this course. Students become acquainted with these diseases and the best methods of prevention. Lectures and laboratory work. Three hours credit. Fall term.

Course 62.—Systematic Zoölogy. A classification of the different groups of animals of the state. By appointment only. Thrre hours credit. Prerequisite, course 1 or 2, or equivalent.

Course 64.—History of Biology. A study of the history of biology from the times of the Greeks to the present. The part different people and individuals have played in developing the science is noted. Required of all students majoring in biology, but open to any college student who has twelve or more hours in biology.

Course 65.—SOCIAL BIOLOGY. In this course the part biology has played in the development of the race is studied, especially the relation of biology to medicine, agriculture and education is emphasized. There are five books to be read and reviewed. Four hours credit.

Course 66.—BIOLOGY AND SECONDARY EDUCATION. With the introduction of courses in agriculture, domestic science and education into the high school, biology takes a new place in this field of education. This course discusses the nature and scope of the work in biology in the high school, and relates it to these allied subjects. Two or four hours credit.

Course 67.—NEUROLOGY. A study of the gross anatomy, physiology and microscopic structure of the nervous system of the vertebræ. Two hours credit.

Course 68.—NUTRITIONAL PHYSIOLOGY. As the name implies, the course gives special attention to the physiology of nutrition. It covers about the same field as the first half of course 11, but goes much more into detail, and has more extended laboratory work. Three hours credit. Laboratory fee for materials used.

AGRICULTURE.

The work of this subject is conducted by means of textbook study, reference work, lectures, demonstrations, observation of field work, laboratory experiments, practical work in the school gardens and at the experiment stations. The experiment stations consist of about thirty-five acres devoted to various experiments and tests that have special value to the teachers and farmers in this section of the country. Through the affiliation of other departments, practical courses in farm blacksmithing, farm carpentry, gas engines and farm mechanics have been worked out to meet the needs of those specializing in agriculture. The following courses are offered:

Course 1.—RURAL-SCHOOL AGRICULTURE. This course is designed to meet the needs of those who are preparing to teach in the grades and rural schools. Practical experiments and demonstrations will be outlined for each grade. First semester; one hour lecture, four hours laboratory and field. Two hours credit.

Course 2.—GENERAL AGRICULTURE. A course n which a general survey of the whole field of agriculture is taken. This course is planned especially for the students who wish a general introduction to this great industry. While Biology 1, 2 or 12 is desirable as a prerequisite, it is not necessary. Three hours credit.

Course 3.—VEGETABLE GARDENING. Principles and practices used in growing vegetables. Special attention is given to the home garden. The scoring, marketing, and canning of vegetables is given special emphasis. The work has been arranged to meet the needs of those specializing in Domestic Science and Agriculture. Second semester; two hours lecture, two hours laboratory and field. Two hours credit.

Course 4.—AGRONOMY. Lectures and recitations on the history, production, cultivation, harvesting and marketing of farm crops. The laboratory and field work will consist of a study of all crops adapted to this region and judging of different cereals. First semester; two hours lecture, four hours laboratory. Five hours credit.

Course 5.—SOILS AND FERTILIZERS Soils are studied as to origin, kind and fertility. Much attention is given to the question of how to keep soils productive and how to keep soils to a high state of production. Twenty weeks. Five hours credit. Laboratory fee for material used.

Course 52.—POULTRY CULTURE. A general course dealing with poultry houses, yards, etc., fattening and marketing, description of breeds and varieties of poultry. Two hours lecture, four hours laboratory. Three hours credit.

Course 6.—ANIMAL HUSBANDRY. This course includes what is usually given in more extensive courses, much attention being given the subjects of breeds and types of farm animals, stock judging, feeds and feeding, and care and diseases of animals. In it the student becomes acquainted with the things necessary to intelligent management of stock on the farm. Two hours lecture, four hours laboratory. Three hours credit.

Course 51.—HORTICULTURE AND FARM FORESTRY. This course gives the student a general survey of the field of fruit and truck growing, gardening and forestry. Much of the work will be done in the field. Spring and summer terms. Three hours credit.

Course 53.—FARM DAIRYING AND BUTTER MAKING. A brief course in the composition of milk and milk products, the use and care of cream separators, the handling of cream, and the manufacture of butter on the farm. Instruction will also be given in the care and feeding of dairy cows and raising dairy calves. Spring and summer terms. Two hours credit. Laboratory fee for material used.

Course 7.—FARM MANAGEMENT. Selection of farms; various systems of farming; investment of capital; scoring of farms in the community; farm layout; labor; details, marketing, farm accounting. Five hours credit.

Course 8.—METHODS IN AGRICULTURAL EDUCATION. The origin and development of agricultural education, especially for teachers preparing to teach in rural and secondary schools. In this course the best methods and materials for the teaching of agriculture will receive careful attention. Practice will be given in outlining agricultural courses. Required of all students preparing to teach agriculture. Prerequisite, ten hours in Agriculture. Two hours credit.

Course 9.—AGRICULTURE CLUB. The Agriculture Club meets regularly on Wednesday, at the noon hour. Here the best articles from the leading agriculture magazines and periodicals are reviewed and discussed. A light luncheon is served, and this work is of special value to those preparing to teach agriculture. Open to all agriculture students.

Commercial Teachers' Course.

E. F. SHOLTZ, Director.
C. M. JONES, Assistant.
ERNEST SCHLICHTHING, Student Assistant.
VERA WHITE, Student Assistant.
FRANK VIETTI, Student Assistant.

The present condition of our country has brought us face to face with the great need of more and better trained business people, and caused us to realize, as never before, the importance and dignity of this work in our present-day school system.

Every progressive high school has a department of business training. Many new departments are being installed in the junior high schools as well as the senior high schools. Therefore, the demand for commercial teachers is much greater than the supply. The salaries offered are good. Our Special Life Diploma in Commerce, given upon the completion of this course, entitles the holder to teach in senior high schools.

FIRST YEAR.

Course 1.—BOOKKEEPING. Double-entry drills. Thorough drill in application of laws of debit and credit. Handling of checks, notes, drafts, and other business vouchers. Opening and closing entries of partnership accounts. First semester. Five hours credit.

Course 2.—BOOKKEEPING AND ACCOUNTING. Consignments, corporation accounts. Manufacturing and trading accounts. Practical problems. Prerequisite, course 1. Second semester. Five hours credit.

Course 3.—BUSINESS LAW. Utility of the subject. Sources and authority of our laws. Contracts, bailments, sales, negotiable instruments, credits and loans, guaranty and surety, agency, partnership, insurance and corporations. Second semester. Two hours credit.

Course 4.—PENMANSHIP. Movement drills. Study of letter forms. Home work. First semester. One hour credit.

Course 5.—PENMANSHIP. Continuation of study of forms. Developing of rapid business hand. Home work. Second semester. One hour credit.

Course 1.—ALGEBRA.—See Mathematics.

Course 5.—COMMERCIAL GEOGRAPHY.—See Geography course.

THEORY OF INVESTMENTS (16).—See Mathematics course.

PARLIAMENTARY LAW (61).—See History course.

SECOND YEAR.

Course 6.—SHORTHAND. Complete the Gregg Manual. Special study of form and movement. Some dictation. First semester. Five hours credit.

Course 7.—DICTATION AND OFFICE PRACTICE. Special drills. Actual office practice. Care of faculty correspondence. Speed of 125, new matter. Prerequisite, course 6. Second semester. Five hours credit.

Course 8.—TYPEWRITING. Complete Ross Method. One hundred charts and finger exercises. First semester. Two hours credit.

Course 9.—TYPEWRITING. Speed drills. Copy work, 60 words per minute, perfect work. Prerequisite, course 9. Second semester. Two hours credit.

Course 10.—METHODS. This course deals with the pedagogical and professional phase of commercial work. The fundamental theory underlying the subjects of the curriculum is emphasized and shown by concrete illustrations. Special methods of instruction, problems and difficulties peculiar to the teaching of each subject, presentation of subject matter, content and arrangement of material, organization and administration, are carefully discussed. The work is conducted by means of recitations, reference readings, lectures, and written reports. First semester. One hour credit.

Course 11.—SALESMANSHIP. Applied psychology in the art of selling. Viewpoint of salesman and purchaser is studied. Study of characteristics that make a good salesman.

ENGLISH (1).—See English course.

EPIC (2).—See English course.

SHORT BUSINESS COURSE. This course is planned for those desiring to prepare for general office work. The course may be pursued as planned, or such subjects as one desires may be selected. Those wanting to prepare for teaching commerce, see Commercial Teachers' Course, outlined on page 64.

Drawing and Design.

LYLE BROWER, B. S., Director.
* JOHN WILKINS, Free-hand.
MISS MAUD L. BARGER, Design.

The department aims to prepare teachers to meet the demands of the public schools for instruction in all branches of drawing, and to prepare supervisors and departmental teachers in art. Also, the students in the industrial courses are required to take many of the studies in this department. The close relation of drawing and designing with the industries is recognized, and all processes of construction must be prepared in the designing and drafting rooms. The art teacher must understand the many possibilities which drawing may open in the life of the child.

Students from this department are holding important positions as art teachers; one as the drawing teacher in a state normal, others as supervisors, departmental and special teachers of drawing.

The following courses are offered for special art students and for students in the industrial departments:

Course 1.—ELEMENTARY DRAWING. A systematic development of observational powers, together with the training of the hand in representing common objects—circular, parallel and angular perspective applied to the exterior and interior of a house—landscape composition and constructive lettering for posters and practical advertising. The course includes form study, drawing of objects in accented outline, linear and aërial perspective, nature drawing. Sketches from costumed models will be made on alternate weeks. One hour credit.

Course 2.—HISTORY OF ART. A general review of the development of art throughout the ages. The student will make written outline of the typical historic types. The purpose is to give a clear idea of the relation of the development of concrete art with the evolution of life. Lectures, reading and written work. One hour credit.

Course 3*a*.—PRIMARY DRAWING. Drawing for the kindergarten and the first three grades of the public schools. A course for those who wish to teach or supervise this work. Drawing, design, and color suitable for the schoolroom. Methods of teaching and organization of the work, with discussion of the relations to public-school problems. Written outlines for these grades. Picture study. One hour credit.

Course 3*b*.—ELEMENTARY ARTS. Construction work for the kindergarten and first three grades. Paper cutting, stick printing, pasting and mounting, raphia work, weaving with paper and yarn, and sand-table work. The work in direct connection with course 3*a*, emphasizing the constructive element. The various materials suited to the work are studied with reference to source of supply, care and use. One hour credit.

Course 5.—PRINCIPLES OF DESIGN. This course is a study of the orderly arrangement and spacing of shapes and the principles of design expressed in line and color. The application of color design to objects, *i. e.*, boxes, cans, etc., which will make useful and beautiful something otherwise worthless. Design applied to textiles by use of yarn and silk. Instruction will be given in batik dyeing.

Course 6.—HISTORY OF ORNAMENT. A study of the distinctive types of historic ornament with reference to their origin, development, derivation from natural and geometric forms, and the influence of individuality and environment upon the characteristic forms. The course is given with reference to the relation of ornament to practical use, for ornament must take its proper place in the industrial arts. Decoration must be used to emphasize the beauty which may be found in the lines and spaces of any constructed article. One hour credit.

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* On leave of absence in the U. S. Army.

Course 7.—CHARCOAL DRAWING. A study from historic ornament, casts and still life in outline, values and modeling in mass; attention being given to the light and dark masses, with proportions of each, half tones and high lights, cast shadows, reflected light, center of interest. One hour credit.

Course 8*a*.—ADVANCED ARTS DRAWING. Drawing for the upper grades, above the third grade. For those who expect to supervise this work in the public schools. Typical forms in drawing, elements of mechanical drawing, and the relation of drawing to the work in the shop or sewing classes, and to the regular school studies. Silhouettes, picture making, foreshortening, convergence, aids and tests in drawing, picture study. Two hours credit.

Course 8*b*.—INDUSTRIAL ART FOR THE PUBLIC SCHOOLS. This course is planned for those who will teach public-school drawing and handwork above the third grade. Suitable problems in construction and applied design will be offered. The use of the coping saw and the designing and decorating of wooden toys will be a special feature of this course.

Course 9.—THEORY OF COLOR. A study of color to develop and refine the color sense, that the student may see, appreciate and enjoy the colors in nature and be able to use color with greater understanding. Primary colors in full intensity, subdued colors, tints, shades, hues and complementary colors; harmony through analogy and contrast. Physical and psychological effects of color. Prerequisite, course 5. Two hours credit.

Course 10.—ELEMENTARY ARCHITECTURE. A practical course in reading and understanding house plans. The course deals directly with the requirements of the prospective home builder. A study is made of a typical plan which will involve the essential elements of a modern home, one- and two-story, with reference to location, lot, finance, suitable plan, arrangement of rooms for convenience, light, sanitation and heat, materials and cost. Prerequisite, course 10. Two hours credit.

Course 11.—SHADES AND SHADOWS. Determination of shade surfaces and casting their shadows; isometric, cabinet and orthographic projections. The purpose of this course is to give a better understanding of the projections used in working drawings. Prerequisite, course 12. One hour credit.

Course 12.—PERSPECTIVE. The theory of mechanical perspective, with its application to the solution of problems in architectural design and in interior decoration, or in the general drawing of articles to be constructed, furniture, machines, etc. Prerequisite, course 12. One hour credit.

Course 13.—ARCHITECTURAL DESIGN. The designing of a modern residence with reference to its location, plan, convenience, sanitation, heating, lighting, and materials. Working plans and elevations, with detail drawings of special interior and exterior constructions. The instructions must conform to the actual practice in building operations. Each student is expected to design a house which he would build for himself. Other constructions, as schoolhouse, barn, etc., may be substituted or included. Prerequisite, course 12. Two hours credit.

Course 14.—SPECIFICATIONS AND ESTIMATES OF COST. A study of the modern house in relation to the cost of a medium-priced home. Cost of materials, types of exteriors, plans and heating systems. Detailed specifications for the home designed in course 13. Prerequisite, course 12. Two hours credit.

Course 15.—ART APPRECIATION. A general survey of the field of art in all ages, with special reference to architecture and design. A study of the great masterpieces in painting, sculpture, and architecture. Lectures and reading, with a written appreciation of the great works of art. Illustrated with lantern. Two hours credit.

Course 16.—CLASSICAL ORDERS. The student is required to draw the orders, to accustom his eye to good architectural proportions. The drawings will be rendered in ink and color values. Designs are built up from compositions of details of the orders, giving ample latitude for exercising ability in design. Prerequisite, course 18. Two hours credit.

Course 17.—HOME ECONOMICS DRAWING. A course of lectures and the working of drawings are included as a part of the regular work in preparation for teaching home economics in public schools. A series of exercises is given in the making of working drawings of pieces of school equipment and layouts of school rooms. One hour credit.

Course 18.—HOUSE PLANNING. The evolution of the home; relation to human life; individuality; the development of the American house. House planning, exterior and interior, with study of the various rooms and their arrangement. Different types of dwellings, with advantages or objections with reference to location. The student must become familiar with the plans of ordinary city and country houses, and be able to criticize intelligently the sanitary and economical construction. He must have a fair knowledge of materials and their relative values; of building sites, with methods of contracting, purchasing, and the finances of purchasing and building a house. One hour credit.

Course 19.—HOME DECORATION. A comprehensive study of the decoration of the interior of the house. Harmonious color schemes for wall draperies, upholstery and rugs; selection and arrangement of furniture. The course is planned for the development of good taste and individuality in the furnishing of a home. Prerequisite, course 9. Two hours credit.

Course 20.—COSTUME DESIGN. A practical course giving a thorough knowledge of good lines, harmonious combinations and appropriateness of the costume for all occasions. Special attention given to pencil and pen sketching and water-color rendering. Tissue-paper models worked out from original designs. Prerequisite, course 5. Two hours credit.

Course 21.—ADVANCED DRAWING. For students possessing talent and training who desire to pursue advanced work along their special lines. Two hours credit.

Course 22.—ART PHOTOGRAPHY. The application of art principles to photography, with instructions in the use of the camera in field and laboratory work; developing, printing, and mounting; enlargements, lantern slides.

Course 23.—WATER COLOR. A special study of rendering in pure water color. Rectangular models in simple full washes of monotone; vase form with rounded effect in color; flower sprays from copy and from still life. Landscape studies from copy indoors, and outdoors sketching of simple landscapes and street scenes. Two or four hours credit.

Education.

Professor D. M. BOWEN.
Assistant Professor W. D. ARMENTROUT.
Assistant Professor EDGAR MENDENHALL.

TRAINING SCHOOL.

D. M. BOWEN, Principal.
ELSIE SHOSHUSEN, Kindergarten.
LILLIAN MCLEAN, Primary.
JESSIE LESLIE, Primary.
BESS HAYDEN, Grammar Grades.
ZOE THRALLS, Grammar Grades.

A minimum of fourteen hours in education is required for a life diploma to teach in the elementary schools and the junior high schools of Kansas. A minimum of twenty-two hours is required for the B. S. degree in education. A major of thirty hours, exclusive of teaching, may be selected in education, and a minor of twenty hours in any other department in which a major is offered.

JUNIOR COLLEGE COURSES. Course 1, Introduction to Education; Course 2, Modern Education; Course 3, Rural Education; Course 4, Current Educational Problems; Course 5, Industrial Education; Course 6, Social Principles in Education; Course 7, General Psychology; Course 7*b*, General Psychology; Course 8, Child Psychology; Course 9, Principles of Education; Course 10, Stories and Literature; Course 11, Kindergarten Theory.

SENIOR COLLEGE COURSES. Course 51, Administration; Course 52, Educational Measurements; Course 53, Rural Education; Courses 54, 55, 58, Secondary Education; Course 57, Educational Psychology; Course 56, Social Psychology; Course 59, Philosophy of Education; Course 60, Psychology of Reasoning.

ADMINISTRATION AND SUPERVISION.

Course 1.—INTRODUCTION TO EDUCATION. Required in all life-certificate courses for teachers, except the course for rural teachers. The aim of this course is to acquaint the student with educational facts which should be the common knowledge of every one engaged in education. This course also furnishes necessary groundwork for more advanced subjects in education. Three hours credit.

Course 2.—MODERN EDUCATION. The purpose of this course is to introduce the student to the best in modern educational ideas and educational practice. As a basis for this course the essential facts of modern educational development will be reviewed. Three hours credit.

Course 3.—RURAL EDUCATION. This course is primarily for beginning teachers and teachers of limited experience and training. The organization of the rural school, the making of the program, problems of school discipline, school-room decoration and equipment. The rural-school playground will receive due consideration. Three hours credit.

Course 4.—CURRENT EDUCATIONAL PROBLEMS. A study of present-day problems in education. The course is based on current educational literature, and involves a discussion of modern ideas concerning the purpose of education, subject matter, motivation, educative processes, measuring results, reorganization of school system and other kindred subjects. A library course, open to sophomores, juniors, seniors and teachers of experience. Four hours credit.

Course 5.—INDUSTRIAL EDUCATION. Designed to familiarize the student with the more professional aspect of the work of the teacher and supervisor of the industrial arts. The work consists of lectures, assigned readings, reports, etc. Among the various topics covered by the work are the following: Early educational history; Pestalozzi, effects of his work; education in Germany, France and England, with reference to industrial education and manual training; work of Victor de la Vos and the Russian system of manual training; Cygnæus, Salamon, and the sloyd movement; the beginning and development of manual training in the United States; aspect of the movement for the promotion of industrial education in the United States and abroad; legislation pertaining to industrial education; work of trade, vocational and technical schools studied and compared; sources of literature bearing on this phase of the public-school work. Second term, three single periods per week for twenty weeks. Open only to students majoring in industrial arts. Three hours credit.

Course 6.—SOCIAL PRINCIPLES IN EDUCATION. A course in educational sociology, dealing with the social laws and principles governing education. A socialization of the school, its administration, course of study, methods, and discipline. A discussion of the school as an instrument for social efficiency. Open to sophomores. Two hours credit.

Course 53.—RURAL EDUCATION. This course will be organized for teachers of experience, principals of village and rural high schools, and supervisors of rural schools. The larger problems of rural education: (1) School and community; (2) hygiene and rural community sanitation; (3) community recreation; (4) the rural church; (5) the rural home; (6) model curricula for rural common schools and rural high schools; (7) school consolidation; (8) the district and county plan of school organization. A basic text will be used, supplemented by reading the reports of state superintendent, school surveys and other apppropriate material. Three hours credit.

Course 51.—SCHOOL ADMINISTRATION. A study of the larger problems of administration; the relation of the state to education; the various units of school organization, district, township, county, state and nation; the various administrative officers, their powers and duties; the teaching staff and present tendencies of education administration in America. Offered spring semester. Three hours credit.

Course 52.—EDUCATIONAL MEASUREMENTS. An application of the principles of scientific management to the problems of the school; measuring the child, his physical and mental efficiency; the latest scientific tests for measuring the product of teaching arithmetic, English composition, handwriting, drawing and other school studies. Prerequisite, four hours psychology. Three hours credit.

Course 54.—ADMINISTRATION OF SECONDARY EDUCATION. The purpose of this course is to introduce the student to the vital problems of secondary education; the administration of secondary schools, courses of study, organization and management, social factors, school government and material equipment. Two hours credit.

Course 55.—PRINCIPLES OF SECONDARY EDUCATION. This course is a combination of course 54, Administration of Secondary Education, and course 58, Psychology of High-school Subjects. Three hours credit.

PSYCHOLOGY.

Course 7.—GENERAL PSYCHOLOGY. The purpose of this course is to give the students a working knowledge of the accepted facts and general principles of psychology. In order to give a fair representation of the science as a whole, the descriptive, structural and dynamic phases of psychology are discussed. The point of view is on the whole functional, more attention being paid to what the mind does than to what it is. Discussions, outlines, readings, reports and simple experiments. Offered each semester. Three hours credit. Prerequisite for all other courses.

Course 7*b*.—GENERAL PSYCHOLOGY. This course deals with the applied and dynamic phases of general psychology in its relation to education. An introduction to the field of educational psychology. For college freshmen who have had elementary psychology in high school. Two hours credit.

Course 8.—CHILD PSYCHOLOGY. The aim of the course is to acquaint students with the most important established facts and principles of mental and physical growth of the child. To enable students to recognize types and individual differences among the children; to notice, interpret and deal properly with certain defects; to cultivate an intelligent sympathy with children. Two hours credit.

Course 9.—PRINCIPLES OF EDUCATION. A course in the art of teaching, based principally upon the science of psychology. A discussion of the principles of psychology which are involved in teaching and their application in the work of the classroom, laboratory and shops. The following problems are analyzed and discussed, showing the interdependence of the various aspects of teaching method and the unity involved in mental development; attention and interest; the formation of habits; memory and the principles of memorizing; imagination, its development and use; thinking and reasoning; transfer of training; types of classroom exercises; how to study; individual differences. General psychology a prerequisite. Three hours credit.

Course 56.—SOCIAL PSYCHOLOGY. A study of psychology of the origin and evolution of mental communities; the psychology of suggestion, imitation, fashion, custom, conventionality, sects, fads, crazes, mobs, and public opinion. Two hours credit.

Course 57.—EDUCATIONAL PSYCHOLOGY. This course deals with the application of psychological principles to education. The laws of learning; the amount, rate and limit of improvement; the factors and conditions of improvement; mental discipline; mental fatigue; individual differences and their causes; and original tendencies of man. Discussions, outlines, readings and reports. Course in general psychology prerequisite. Three hours credit.

Course 58.—PSYCHOLOGY OF HIGH-SCHOOL SUBJECTS. A course in applied psychology dealing with subjects in the high schools: mathematics, foreign languages, English, science, history, manual training, household arts. The problems of teaching students to study, and other secondary school problems. Two hours credit.

Course 59.—PHILOSOPHY OF EDUCATION. An interpretation of education as an integral phase of the life process, as a phase of human endeavor. A discussion of certain fundamental problems of education from the viewpoint of philosophy. A study of the aim, content and method of education as determined by the philosophy of education. Open only to juniors and seniors. Two hours credit.

Course 60.—PSYCHOLOGY OF REASONING. In this course emphasis is laid on the processes of induction, deduction and the interpretation of facts. An analysis of thought; concrete and abstract thinking; the making and testing of hypotheses; values and dangers of hypotheses; observation and information. Two hours credit.

KINDERGARTEN.

Course 10.—KINDERGARTEN THEORY. Taking the child as center of correlation, a study is made of his development, especially of the doctrine of kindergarten procedure as modified in Froebelian literature. The foundations for the work of the course are the student's memories of his own childhood, observation, and experience with children. A study is made of child play, methods of utilizing, etc., leading on the one hand to a study of the gifts, and on the other hand to a study of the occupations. Three hours credit.

Course 11.—STORIES AND LITERATURE. A course designed to supply training for the work of story-telling in the kindergarten and primary grades. Practice and discussion in the art of story-telling are a part of the work. The sources of literature of the development of the myths are studied. Not only should the art of story-telling be developed in this course, but discrimination in the choice of stories for various uses of study; also the origin and meaning of myths, fairy tales and fables, and the classification, adaptation and dramatization of stories. The course is intended for those enrolled in kindergarten and primary, but may be profitably taken by any one desiring to learn the art of story-telling. Two hours credit.

THE TRAINING SCHOOL.

The Training School of the State Manual Training Normal School consists of regularly organized classes, from the kindergarten to the ninth grade, inclusive. In addition, some of the regular high-school classes are utilized for training purposes in the most advanced college classes. The school is organized into the following departments: Kindergarten; Primary; Intermediate; Advanced Grammar or Junior High School; and Departmental Teaching. The work is so planned that prospective teachers may specialize in either of the above departments or secure their training in various grades of school work. The School now has enrolled 250 students, and is under control of a director and five critic teachers, assisted by the heads of various departments of the institution.

The purpose of the Training School is to give the students an opportunity to observe good teaching, to secure actual experience in teaching and managing classes, to study the subject matter of the course of study and methods of organizing and presenting the same to classes. Courses in teaching are organized as follows:

KINDERGARTEN TEACHING. This course requires two hours per day for one semester spent in the Kindergarten in observation teaching and the study of kindergarten theory. This course may be duplicated the second semester. Four hours credit.

PRIMARY TEACHING. The course requires one hour per day for a semester in the Primary Department in observation and teaching. In addition, lesson plans and lesson preparation must be made before coming to class. The student is required to meet the critic teacher or head of department one hour each week for conference. Required of all taking primary teachers' course. Course duplicated the second semester. Three hours credit.

INTERMEDIATE GRADES. Requirements for this course are as follows: One hour per day for semester in observation and teaching in classroom under direction of critic teacher, one hour per week in conference with critic teacher and other student teachers, and the necessary time in preparing lessons and lesson plans. Three hours credit.

RURAL TEACHING. This is a combination in which the student will spend half the semester in observation or teaching in the primary grades, and the other half in teaching or observing in the intermediate or grammar grades; also opportunity for observing in standard rural school. The course is intended for those planning to teach in rural or other ungraded schools, and is open to high-school seniors. Three hours credit.

DEPARTMENTAL TEACHING. This course is under the direction and control of the head of the department in which the student is majoring. He is required to teach a class in his major subject for one semester, organizing the subject matter for teaching purposes, subject to approval of the head of the department. Three hours credit.

English Department.

MISS OWEN.
MRS. HANBERRY.

COLLEGE ENGLISH.

Course 1.—CONSTRUCTIVE ENGLISH. The formal side of English, both written and spoken. A study of the paragraph, of sentence forms, of punctuation, letter writing and formal notes. The entire course correlated with a study of American Classics and the late war literature. Four hours credit. Open to freshmen.

Course 2.—THE EPIC. A study of the Lesser Epic: "Sohrab and Rustum," "The Idylls of the King." The Great Epic: "The Illiad," "The Odyssey," "Paradise Lost." Four hours credit. Open to freshmen and sophomores.

Course 3.—SHAKESPEARE. A critical study of the great dramatist as to technique, art, plot, ethics, with some study of the Elizabethan theater, and a close study of several of the greatest plays. Three hours credit. Open to all college classes.

Course 4.—LITERARY CRITICISM. An intensive study of lyric poetry with reference to construction, style, art, spirit, unity, and consistency, with special attention paid to the intellectual, the imaginative and the emotional elements of the classic. Three hours credit. Open to sophomores and juniors.

Course 5.—THE SHORT STORY. Construction work on plot, characterization and visualization, a critical study of some of the short-story masterpieces and others growing out of the great World War. Two hours credit. Open to freshmen and sophomores.

Course 51.—HISTORY OF ENGLISH LITERATURE. The history of English literature from its beginning to the Puritan Age. Emphasis on "Beowulf," the evolution of the English language, Chaucer; an intensive study of Chaucer's "Prologue," and two of "The Canterbury Tales." Four hours credit.

Course 52.—HISTORY OF ENGLISH LITERATURE. The history of English literature from the beginning of the Puritan Age to close of the Victorian Era. Milton's shorter poems, the classical school, and the Romantic Revival. Four hours credit.

Course 53.—THE ENGLISH DRAMA. A study of the evolution of the drama from the miracle plays to the closing of the theaters by the Puritan Parliament. A study of Lodge, Green, Marlowe, Shakespeare, Johnson, Beaumont and Fletcher, Ford, Middleton, Webster, Massinger. Three hours credit. Open to juniors and seniors.

Course 54.—EVOLUTION OF THE NOVEL. Richardson, Fielding, Smollet, Sterne, Austen, Bronte, Scott, Dickens, Thackeray, Eliot, Hawthorne, James, Howell. Three hours credit. Open to juniors and seniors.

Course 55.—VICTORIAN POETRY. Appreciation and criticism of Browning, Tennyson, Arnold, Rosetti, Swinburne. Some attention to current poetry. Two hours credit. Open to juniors and seniors.

Course 56.—THE ENGLISH ESSAY. Bacon, Montaigne, Arnold, Lamb, Ruskin, Macaulay, Carlyle, Fitch. Two hours credit. Open to juniors and seniors.

Course 57.—CURRENT PROSE AND POETRY. An intensive study of the masterpieces of prose literature growing out of the World War: President Wilson's first "Lusitania note," his "Flag Day" speech; his speech to Congress asking for a declaration of war on Germany; speeches of Premiers Asquith, Lloyd George, and Clemenceau; of President Poincaire, Secretary Lane, Gompers, and others. A careful reading of selected poems originating and inspired by the Great War. Two hours credit.

Geography.

Professor EULALIA ROSEBERRY.
GLEN LITTON, Student Assistant.
REVE BREWER, Student Assistant.

COLLEGE.

The department is well fitted with maps, globes and charts for lecture work. The laboratory has a complete equipment of apparatus for physiography, topography, meteorology and mathematical geography. A standard topographic alidade and a number of slope boards have recently been acquired for use in contour work, road and area sketching and map making.

Course 1.—PHYSIOGRAPHY. Designed for college students who desire scientific knowledge of the earth, its relations, physical features, and their origin and development. The work is supplemented by laboratory and field work. Economic controls are given special attention. Courses required in grade teachers' course. Offered each semester. Never in the history of the world has a knowledge of these factors been so desirable as at the present time. Five hours credit.

Course 1*b*.—PHYSIOGRAPHY. The course is designed for college students who have had one year's work in high-school physical geography. The course embraces the scope of work in course 1, in review. Three hours credit.

Course 2.—INDUSTRIAL GEOGRAPHY. This course includes, first, a brief study of the geographic basic controls of climate, soil and topography. The course encompasses the origin, history and development of agriculture, textiles, food products, minerals and manufacture of machinery as controlled by geographical factors. This course is especially valuable for the grade teacher, and is particularly designed to correlate with the industrial courses. Three hours credit.

Course 3.—GEOGRAPHY OF AMERICAN HISTORY. This course is designed especially to correlate with American history courses, and consists of a study of geographic conditions which have influenced the course of American history and of their importance as compared with one another, and with nongeographic factors. Special attention will be given geographic factors influencing the recent war. Three hours credit.

Course 4.—PRIMARY GRADE WORK. The teacher in the primary grades must, in order to give the most efficient service, have a knowledge of geographic control far beyond that which is necessary to give the pupil. This course is designed especially to give necessary knowledge to the teachers of nature study and of primary grades, and for those doing departmental work in geography. The work consists largely of the selection and adaptation of material best suited to first four grades and to the method of presentation. Three hours credit.

Course 5.—GRAMMAR GRADE WORK. This course encompasses, first, a study of basic geographic controls, and second, subject matter and methods for the grades above the fourth, and is designed for grade and rural teachers and those doing departmental work in geography. The problem method in geography is given special attention. Two hours credit.

Course 6.—COMMERCIAL GEOGRAPHY. This course is organized to give the student a scientific knowledge of the three distinctive sets of controls—the natural, the human, and the economic. It correlates not only with the other commercial courses, but with the industrial subjects as well. Three hours credit.

Course 7.—GEOGRAPHY REVIEW. This course is for students who desire a thorough review of general geography and for those who teach in the grades, and those who are preparing to do departmental work in geography. Two hours credit.

Course 8.—Industrial Geography of Kansas. This course is offered to give the students an opportunity to study the industrial development of our own state as controlled by geographic influences. Two hours credit.

Course 9.—Mathematical Geography. This course is offered in order to give the student an opportunity to make a definite study of the size, form, movement and measurements of the earth, together with its relation to the sun and moon. Two hours credit.

Course 10.—Topography. This course is designed to give the student an opportunity to study designated areas in detail. Students are given an opportunity to learn use of slope board and topographic alidade, and are given practice in interpreting and making topographic maps. The course is entirely laboratory, conference and field work, and gives one, two, or three hours credit. Amount of credit depending on amount and quality of work done by student.

Course 11.—Geography of Europe. This course deals particularly with the effect of geographic factors on the political and economic situation in Europe.

History and Social Sciences.

Professor Trout.
Assistant Professor Grubbs.
Assistant Professor Rutherford.
Assistant Professor Caseley.

Course 1.—Greek History. A general survey of ancient Greece from the earliest period to its conquest by Rome. Lectures, reports, discussions and library readings. Open to freshmen and sophomores. First semester. Two hours credit.

Course 2.—Roman History. This course takes up Rome at her earliest date and follows her career to the fall of the western empire. Reports, discussions and library readings. Open to freshmen and sophomores. First semester. Two hours credit.

Course 3.—Medieval History. A survey of western Europe from the fall of Rome to the opening of the Renaissance. Open to freshmen and sophomores. Second semester. Three hours credit.

Course 4.—Modern History. A brief course in the history of Europe from the opening of the Renaissance to the outbreak of the French Revolution. Open to freshmen and sophomores. Second semester. Three hours credit.

Course 5.—English History. A general survey of the whole range of English history down to the present time. Special attention to rise of English government and institutions and their relation to our own. Outlines will be used and special readings assigned, papers prepared and read before class. Five hours credit.

Course 6.—American History I. This is a thorough college course covering the subject of American history for mature students and teachers who may want to strengthen themselves in the teaching of the subject. Four hours credit.

Course 7.—Constitutional History. A study of the evolution of the American constitution, its interpretation and application to the times. Two hours credit.

Course 51.—Industrial History. A careful study of our natural resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to the present time. Besides the use of a text the students are required to prepare papers and read them before the class for discussion. Offered three hours per week during second semester of sophomore or junior year, college course. Three hours credit.

Course 52.—ECONOMICS. This course deals with the theories and principles of man's activities in the satiation of human wants. It applies these principles and theories to the production and consumption of wealth. It aims to lay well the foundations for advanced work along this line. Special subjects assigned to individual students for investigation and reports to the class. Offered five hours per week during first semester of junior or senior year, college course. Five hours credit.

Course 53.—POLITICAL SCIENCE—COMPARATIVE GOVERNMENT. In this course we study the theories and functions of the modern state as exemplified in the leading nations of the world. Also careful observation of likenesses and differences of these states. Offered three hours per week during second semester of junior or senior year, college course. Five hours credit.

Course 56.—MODERN EUROPE. Beginning with 1815, governmental change and progress of the countries of Europe up to 1870 are studied. Special emphasis is laid upon the rise of popular governments, the formation of political parties and the limitation of monarchies. Two hours credit.

Course 57.—TEACHING HISTORY. Open to all students majoring in history or those who have had at least fifteen hours in history and expect to teach it. Offered two hours per week during first semester of senior year, college course. Two hours credit.

Course 58.—SOCIOLOGY. An introductory study of the nature, function and development or progress of society. The aim is to familiarize the student with society and some of its problems and cultivate a desire to aid in the solution of these problems. Three hours credit.

Course 59.—APPLIED SOCIOLOGY. In this course we endeavor to apply the principles of sociology to present-day problems. Course 58 is a prerequisite. Offered two hours per week during second semester of senior year, college course. Two hours credit.

Course 68.—RURAL SOCIOLOGY. A study of rural life in its relation to its social centers, with special reference to the rural church, school and other social centers. Offered two hours per week. Two hours credit.

Course 60.—HISTORY OF THE REFORMATION. This course is preceded by a brief survey of the rise of the Christian church, its institutions and doctrinal development. Special emphasis is laid upon the causes leading to and the great agents employed in the Reformation. Three hours credit.

Course 61.—PARLIAMENTARY LAW AND PRACTICAL LEGISLATION. This course is to develop the ability of the student to preside over deliberative bodies creditably; also to inform him as to the actual practical methods employed in our legislative assemblies. It will consist of special drills and textbook work. Offered two hours per week. One hour credit.

Course 62.—BIBLE STUDY. This is a course of one hour recitation per week in a careful study of the English Bible. Offered each semester after school hours. One hour credit.

Course 63.—AMERICAN HISTORY II. This course covers the period from 1750 to 1829. It is a study of those forces and events which helped to create a national ideal and a national spirit. It deals with those contributions and political problems from within and from without which tended to weld our people into one sovereign state. Two hours credit.

Course 64.—AMERICAN HISTORY III. This course is a study of the difficulties and dangers threatening the life of a nation, together with the forces that contributed to our marvelous progress. It covers the period from 1829 to date. Two hours credit.

Course 65.—CURRENT HISTORY. A thorough study of current events in which we use the best periodicals and magazines for material. One hour a week. Open to all college students. One hour credit.

NOTE.—Courses 62 and 65 are open to all classes.

Course 67.—LATIN AMERICA. A brief study of the history and traditions of our neighbors to the South—Mexico, Central and South America—with emphasis upon their social, racial and economic development, and their relation to Europe and to the United States. Two hours credit.

Course 70.—EUROPE FROM 1870 TO DATE. This course is to take up the political problems of Europe since the formation of the German empire and study these in reference to the present Great War. Two hours credit.

Course 21.—CIVIL GOVERNMENT IN THE UNITED STATES. The purpose of this course is to study the structure and functions of the government of the United States, local, state, and national. Such topics will be considered as the constitutional development of American government, the powers and activities of various organs of government and administration, and proposed reforms within the field of American government. Special stress will be laid upon the relation of American state governments to contemporary economic and social problems. Five hours credit.

Course 69.—FINANCIAL HISTORY OF UNITED STATES. A brief review of the methods of raising revenue in the United States, the nature of the circulating medium, and the relations of our banking systems to our national life, past and present. This course coördinates with course 51. Two hours credit.

Course 19.—OLD TESTAMENT HISTORY. This course is designed to cover the authorship and transmission of the books of the Old Testament to our time, together with the historic background surrounding the authors at the time of the writeup of these books. Offered two hours a week during the first semester. Two hours credit.

Course 20.—NEW TESTAMENT HISTORY. This course covers the period of the writing and collecting of the several books of the New Testament, with a study of the authors and purposes of their messages. Offered two hours a week during the second semester. Two hours credit.

Course 47.—THE SOCIAL TEACHINGS OF JESUS. This course is designed to furnish an opportunity for the student, in these days of great social changes and scientific study of human society, to discuss what Jesus taught as recorded in the New Testament concerning the special problems of his day, and their present-day application. Offered two hours a week. Two hours credit.

Course 80.—CHRISTIAN EVIDENCES. This course is a rational study of the evidences bearing upon the facts of Christianity as a life and saving factor in human society. Two hours a week. Two hours credit.

Course 85.—ETHICS. This course is designed to help the teacher in placing before his pupils such rational standards of moral conduct as will be easily understood and readily accepted as the proper mode of conduct. It is not a technical course, but is made more practical and designed to be most helpful to the teacher in helping him to produce the right sort of standards of conduct. Offered two hours a weeek. Two hours credit.

Home Economics.

ZOE WOLCOTT, Ph. B., A. M.
ANNA MARRIOTT, B. S.
ALICE THOMAS, A. M.
EDNA MERNITZ, B. S.
GRETA SMITH, B. S.
VIRGINIA SHEARER, B. S.
EDITH CASSEDAY.

The department will be located in the new building at the opening of the Summer Term, and here every facility for thorough theoretical and practical training will be available. There will be three large food laboratories, with the best and most modern equipment, and an experimental kitchen where work in meal preparation and individual experimental work will be carried on. This opens into a dining room. There will also be large sewing and textile laboratories, a laundry, and a lunch room, where school lunches and the smaller banquets will be served.

A new feature of the department is the practice house where the junior and senior girls find the practical solution of problems in household management and dietetics.

COURSES FOR TEACHERS. Two four-year courses, each leading to the degree of bachelor of science, are given. Students may major either in domestic art or domestic science. Upon the completion of the second year of these courses, life certificates to teach in Kansas are conferred. The students are urged, however, to complete the four-year course before accepting positions in high schools. Two special courses for rural school-teachers are offered.

COURSE FOR HOME MAKERS. This course is planned for those women and girls who are not qualified to enter the degree course or who do not care to spend the time required for the longer course. The course will be open to those who have an eighth-grade education or its equivalent. It is a purely practical course and does not prepare for teaching. No college credit is given for this work. The course is made up of one year's work, and upon the completion of the work a certificate will be granted.

Course for Home Makers.

First Term:
- Cookery (D. S. A.).
- Sewing (D. A. J.).
- Household Management (D. S. E.).
- Personal Hygiene.
- Art in the Home.

Second Term:
- Advanced Cookery and Serving of meals (D. S. F.).
- Home Nursing and Child Care (D. A. G.).
- Millinery (D. A. K.).

COURSE FOR LUNCH-ROOM MANAGERS. There are many calls for women to become managers of school and commercial lunch rooms, cafeterias, and tea rooms. To prepare candidates for this sort of work two special courses are offered, namely, Institution Cookery and Lunch-room Management. It is recommended that students complete the first two years of the college-degree course before selecting these subjects.

DOMESTIC ART.

Course 1*a*.—SEWING AND GARMENT MAKING. This is a general preparatory course for students who have had no domestic art in the high school. It covers all the fundamental elements of sewing and gives practice in applying them upon simple garments and dresses. A fee is charged to cover material used in laboratory. Three hours credit.

Course 1*b*.—SEWING AND GARMENT MAKING. This is a regular college course in garment making, handwork and outer garment making. The use and making of demonstration material is emphasized, and a good deal of the time is spent upon the proper presentation of domestic-art problems in the grades and high school. Prerequisite, high-school domestic art courses. A fee is charged to cover materials used in laboratory. Three hours credit.

Course 2.—SEWING AND GARMENT MAKING. This course deals with the simple problems of cutting, fitting, and alteration of commercial patterns. Special attention is given the making and use of demonstration material. A wash dress, a tailored middy, and a tailored linen dress are made. Prerequisite, course 1. A fee is charged to cover materials used in laboratory. Three hours credit.

Course 3.—TEXTILES. This course presents the foundation principles of the textile industry, special emphasis being placed upon early methods as an interpretation of the present methods of manufacture. The student is prepared to present this work in a graphic way and to become an intelligent judge of the quality and suitability of the various fabrics used for personal and household purposes. A fee is charged to cover the materials used in laboratory. Four hours credit.

Course 4.—DRAFTING. Straight-line drafting is taught in this course. Pattern making, simple designing, the altering and adjusting of patterns to various fabrics of form are studied. A fee is charged to cover materials used in laboratory. Two hours credit.

*Course 5.—METHODS. This course deals with the teaching of domestic art in grammar and high school. This should be taken before practice teaching is done. Two hours credit.

Course 6.—DRESSMAKING. Commercial patterns, the proportions of the human form, the application of the principles of design and color to the gown, and the finishing of waists and gowns are studied in this course. The projects are a waist, a woolen or worsted dress, and a graduation gown. Prerequisite, course 4. A fee is charged to cover material used in laboratory. Four hours credit.

Course 7.—EMBROIDERY AND NEEDLEWORK. This course provides instruction in various kinds of embroidery. Crocheting, tatting and other phases of needlework are developed. A fee is charged to cover materials used in laboratory. Two hours credit.

Course 51.—DESIGNING AND DRAPING. This course gives instruction in advanced drafting and designing. Waists, skirts, sleeves and gowns are designed from foundation drafts, and more elaborate designs are draped on the form, cheesecloth and other inexpensive materials being used. No garments are made, but an invaluable knowledge of line and proportion is gained. Prerequisite, course 4. A fee is charged to cover materials used in laboratory. Four hours credit.

Course 52.—ADVANCED DRESSMAKING. This course provides opportunity for further developing the sense of line and proportion gained in courses 4 and 51. It deals with the characteristic use of silks and velvets. The projects are an afternoon gown and an evening gown. Prerequisite, course 51. A fee is charged to cover materials used in laboratory. Four hours credit.

Course 53.—ADVANCED NEEDLEWORK. This course includes the planning and making of a layette. The school furnishes the material for garments unless the student wishes to keep the articles made. Prerequisite, course 1. A fee is charged to cover the material used in laboratory. Two hours credit.

Course 54.—MILLINERY. This course deals with the selection of materials, the making and covering of frames, the fitting and trimming of hats, the making of flowers, and the renovating of millinery materials.

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* This course is given in the Home Economics Department, but counts as education.

Emphasis is placed upon the proper selection of hats, and their suitability to the wearer and the occasions for which they are intended. A fee is charged to cover material used in laboratory. Four hours credit.

Course 55.—Sewing for Rural School Teachers. This course has for its aim the training of teachers in work in domestic art which might be given in rural schools. The work consists of hand sewing chiefly, also the teaching of good taste in color combinations and decoration. Outlines and courses of study are made. A fee is charged to cover materials used in laboratory. Three hours credit.

Course J.—Sewing—Home Makers' Course. This course is planned to give the student experience in the needlework problems of the home. A fee is charged to cover materials used in laboratory.

Course K.—Millinery—Home Makers' Course. This is practical work in the making, fitting and trimming of hats, also the renovation of materials. A fee to cover materials used in laboratory is charged.

Junior Red Cross—Emergency Course. The Junior Red Cross worker offers an unsurpassable medium through which the patriotic activities of the children guided and directed by the teachers can make themselves felt. This course will give suggestions and work in the construction of clothing for the Belgian refugees and for the homeless French children. It lays special stress on suitable Junior Red Cross problems for the boys and girls in all grades. The organization of Junior Red Cross units will be a special feature of this course. Two hours credit.

DOMESTIC SCIENCE.

Course 1.—Elements of Cookery. This course is planned for students who have not had a course in food preparation in high school. It develops skill in the technique of cookery, and takes up a thorough study of foods; kinds, growth, preparation for market, composition, digestibility and fuel value. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 2.—Foods and Cookery. This is a continuation of course 1. The two courses cover a study of beverages, cereals, vegetables, batters and dough, meats and poultry, fish, eggs, milk, and cheese. Following this scientific study of foods, preliminary work in serving and making menus is taken up. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 1*a*.—Technology of Cookery. Courses 1*a* and 2*a* are planned for those students who have had the equivalent of a good two-year high-school course in foods and cookery. It deals with the more difficult problems of the technique of cookery and with the principles underlying the cookery of all types of foods. Much time is spent on efforts to give the students the viewpoint of a teacher of cookery. The student's work during these courses will give a content sufficient for a teacher's background in foods and cookery and the best methods of presenting the work in elementary and secondary schools. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 2*a*.—(Second semester.) A continuation of course 1*a*. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 3.—Preservation of Foods. This course includes the study of food preservation. Canning and preserving of fruits, jellies, conserves, marmalades and pickling, canning of vegetables. One hour credit. A fee is charged to cover materials used in laboratory.

*Course 4.—Methods. This is a special methods course dealing with administrative problems connected with home economics subjects in the public schools. The course includes the making of courses of study throughout the grades and high school, cost and planning of equipment, the correlation of these subjects with other subjects, educative value courses and disciplinary problems. Two hours credit.

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* This course is given in the Department of Home Economics, but counts as education.

Course 5*b*.—CARE AND FEEDING OF INFANTS AND INVALIDS. This course includes the study of abnormal conditions of the individual, through prevention and treatment, emergencies and home nursing. The second half of the course is a study of the care and feeding of infants, including mothercraft. Two hours credit.

Course 5*a*.—HOME COOKERY AND TABLE SERVICE. The purpose of this course is to give opportunity for practice in home cookery, fancy cookery, and the serving of both formal and informal meals. Two hours credit. A fee is charged to cover materials used in laboratory.

Course 51.—EXPERIMENTAL COOKERY. This is a quantitative study of cooking processes, comparative study of recipes, and the cost of materials involved. Relative values of various food products common in the present-day markets. Work in demonstrations will be given along with this course. Two hours credit. A fee is charged to cover materials used in laboratory.

Course 52.—HOUSEHOLD MANAGEMENT. General management of the home is studied in this course. Care of the house; values in furnishings; investigations and discussions which will secure an intelligent judgment of expenditures involved in housekeeping: rent, fuel, light, water, furniture, and the cost of living; sanitation and the prevention and removal of unsanitary conditions. Laundry work is studied in this course. Two hours credit.

Course 53.—DIETETICS, IN HEALTH AND IN DISEASE. This course presents the application of the fundamental principles of human nutrition under varying physiological and economic conditions; in the laboratory quantitative studies of food values are made. The course deals with food requirements of the individual in infancy, adult life, and old age. Typical dietaries are planned for the individual and family requirements. Four hours credit. A fee is charged to cover materials used in laboratory.

Course 54.—ELEMENTARY RESEARCH. Special problems in housewifery and housekeeping; surveys of city family conditions and rural family conditions will be made, and the general purpose of the household and family as related to the state, to education, and to industry will be investigated. The thesis work of the graduate students will be done in this course. Two hours credit.

Course 55.—DEMONSTRATION. This course offers a study of cookery demonstration, and equips the student to give instructive demonstrations. The aim of this course is to fit the teacher to do community work, as well as classroom work. Two hours credit. Fee charged to cover materials used in laboratory, 50 cents.

Course 56.—SCHOOL LUNCHES. This course is a study of school lunchroom work such as is directly applicable to the public-school needs. Accounts, menus, serving, overhead expenses, and the actual serving of the lunch are included in the course, making it a purely practical course. Three hours credit.

Course 57.—COOKERY FOR RURAL SCHOOL TEACHERS. This course is planned for rural-school teachers and has for its aim the study of possibilities of instruction in cookery in these schools. Training is given in the principles of cookery and courses of study are made. A study is made of equipment for teaching cookery in rural schools, serving of noonday lunches, home economics community clubs, and other problems which might arise. Three hours credit. A fee is charged to cover materials used in the laboratory.

Course 58.—Institution Cookery. This course is made up of lectures, conferences, observations and practice. The practice work consists of the preparation of food in large quantities, catering for entertainments, school lunches and banquets. A study is made of room plans, equipment, arrangement of menus, problems in connection with the serving of food, employees, food economics, and waste control, and the purchase of food in large quantities. Visits are made to local institutions, such as hotels and hospitals. This course is given in the college cafeteria. Three hours credit.

Course 59.—Lunch-room Management. This in a course for students who wish to prepare for lunch-room management. A study is made of the principles of scientific management and their application to lunch rooms; charting, time and motion studies, standardization of equipment and processes, making of schedules for employees, score cards, record keeping, etc. A trip to Kansas City for the purpose of visiting and inspecting various types of lunch rooms, wholesale houses, etc., is advised. Two hours credit.

Course A.—Cookery—Home Makers' Course. This course is purely practical and includes the preparation of vegetables, fruits, cereals, meat, eggs, bread, cakes and pastry; also work in canning and preserving. Attention is given to food combinations, place in the menu, and costs. One hour credit. A fee is charged to cover materials used in laboratory.

Course E.—Household Management—Home Makers' Course. This course includes work in housewifery, budget making, keeping accounts, and other problems of the home maker.

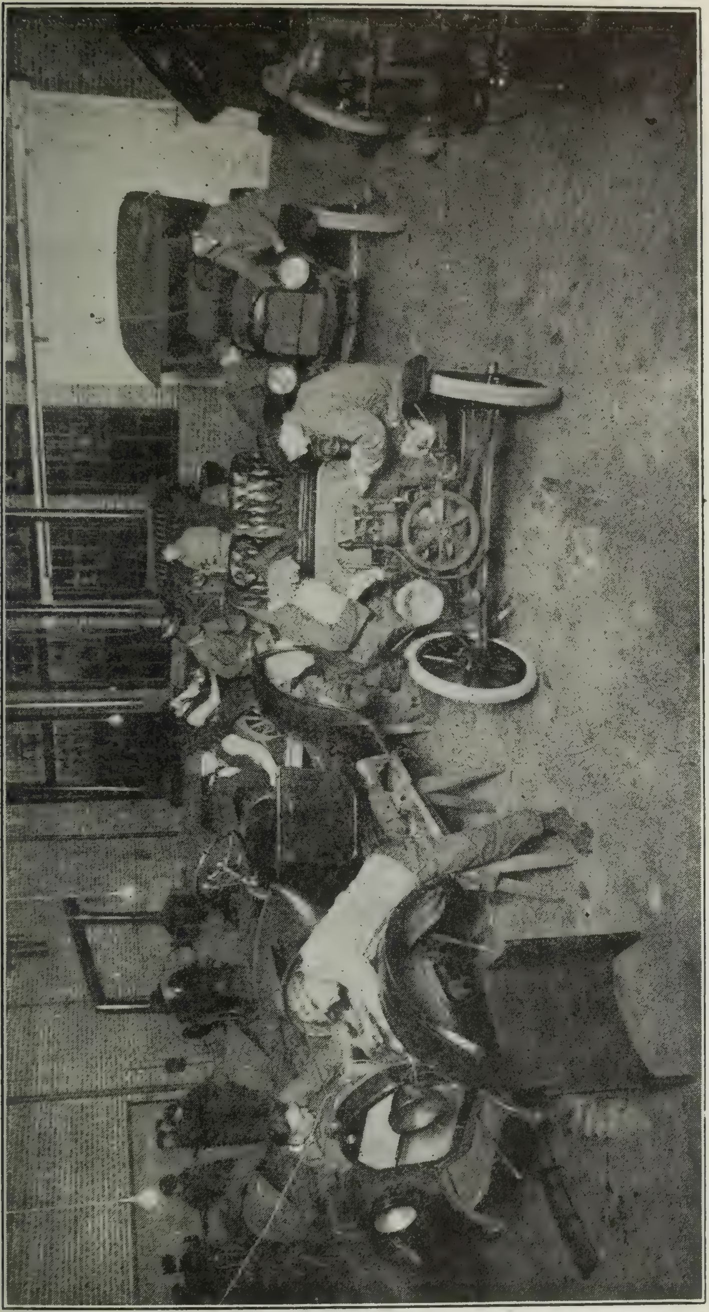
Course F.—Advanced Cookery and Serving of Meals—Home Makers' Course. This course deals with more elaborate methods of food preparation; also the serving of meals of various kinds, such as the formal, informal and family meals, buffet luncheons, and afternoon teas. A fee is charged to cover materials used in the laboratory.

Course G.—Home Nursing and Child Care—Home Makers' Course. This course consists of lectures by specialists, observation of symptoms, first aid, food for invalids, and general care of the sick. Another series will take up the growth and development of the child, its food and general care.

Industrial and Applied Arts.

A. H. Whitesitt, Director.
F. H. Dickinson, Pattern Making and Foundry.
C. R. Wasser, Cabinetmaking and Furniture Design.
O. B. Badger, Superintendent of Practice Teaching.
J. G. Wilkins, Wood Finishing, Applied Design.
Ralph Erskine, Machine Shop and Forging.
Chas. Matthews, Automobile Mechanics.
————, Plumbing and Sheet Metal.
————, Drafting.
Vivian Atwood, Arts and Crafts.

The entry of America into the World War revealed the fact that our country is greatly in need of men and women skilled in technical and trade lines. It is a very satisfying fact that we met and solved the herculean industrial problems confronting us, and history will in due time acknowledge the great contribution that our technical institutions and departments made to this marvelous achievement. These institutions must not lose sight of the greater work that they are yet to do if they measure up to the aims and ideals set for them. The Industrial Arts Department of this institution is keeping pace with the aims and ideals imposed by these new world conditions.



AUTOMOBILE MECHANICS.

We are living in a greatly changed world, socially and economically. It behooves each individual to conserve and utilize his time by acquiring that knowledge which will increase his hope as well as his salary, secure more economic independence, and fit him for greater and higher social service. This department is offering that opportunity by greatly intensifying its existing courses and by the addition of many new and vital ones. We have long held an enviable position in the industrial education field: first, because our institution was conceived in a spirit of service to our commonwealth, and has been unusually fortunate in having as its faculty men and women with this same unselfish desire to serve. This department is no less fortunate than the institution of which it is a part, for its faculty vies with all others in its efforts to give its greatest service to those whom it serves. This we hold as our greatest asset. Second, ours is one of the best industrial arts buildings in the country. It is commodious, well lighted and sanitary, and is equipped second to none. This department is prepared to meet the new and greater demands.

SPECIAL PROFESSIONAL COURSES.

Course 1.—OBSERVATION AND PRACTICE TEACHING. Splendid opportunity obtains in conjunction with the Training School and High School departments to observe and teach classes under the usual school conditions. This course is required for all certificates and the degree. Three hours credit in Department of Education.

Course 2.—METHODS OF TEACHING INDUSTRIAL ARTS. A course contemporaneous with observation and practice teaching. It includes a study of the principles of teaching with reference to the industrial arts; methods of teaching, constructive criticism and typical lessons observed and resulting discussions. Lectures, reading and written work.

Course 3.—ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL ARTS. This course deals with the principles underlying the organization of shop courses. A study is made of the organization of some of the best industrial and vocational schools; relation of industrial arts to other school courses; administration and supervision of an industrial arts department; planning equipment; cost of equipment and maintenance of courses in elementary and secondary schools; specifications for equipment and supplies. Two hours credit in the Department of Education.

Course 51.—HISTORY OF INDUSTRIAL AND VOCATIONAL EDUCATION. The work of this course consists of lectures, readings and reports concerning the meaning and scope of industrial and vocational training, qualifications for teachers; early educational history; the beginning and development of manual training in the United States; the movement for the promotion of industrial education in the United States; legislation; work of trade, vocational and technical schools; sources of literature bearing on this phase of the public-school work. Three hours credit in Department of Education.

Course 53.—SURVEY OF INDUSTRIES. Industrial education means industrial and social efficiency. Industrial education has, therefore, for its purpose the acquisition of a fund of knowledge that is capable of making its possessor an efficient future worker in the industrial world. It must acquaint the individual with the tools and materials used in industrial processes. It must give him a broad outlook upon industrial conditions. It must do its part to make him a useful, happy citizen. The time is at hand when more than mere ability to instruct in the use of tools is demanded of the manual training teacher. The man who possesses this broad understanding of the purpose of industrial training is the man who is now in demand as the director of the industrial work in our public-school systems. This makes this school a pioneer in this field of work by giving its students an opportunity and aiding them in making a survey of the industries of this community and of the state, so that the teachers and directors of industrial work in this state may know how to become acquainted with the needs of the community in which they may be employed, that their work in the school may properly function in the world without. Two hours credit.

WOODWORK.

Course 1.—BENCH WORK. A course which aims primarily to give training in the technical processes as a basis for teaching in the Junior High School. An effort is made to balance theory and practice. A portion of the time is given to demonstrations and lectures and discussions on methods of teaching and courses of study. Students prepare and present lessons and demonstrate tool processes as they would be given to a public school class. Throughout the term outside reading is required on such subjects as tools and tool processes, principles of construction, fastenings—nails, screws, dowels and glue. Four hours credit.

Course 3.—ADVANCED BENCH WORK. This is a continuation of course 1, and is planned for those whose work in that course is not such as to justify admission to the course in furniture and cabinetmaking. The number taking this course will be few, and greater opportunity will obtain for a more intensive study of individual needs. A reasonable latitude will be given the individual student in the selection of projects so long as the project involves the principles being taught. Four hours credit.

Course 5.—ELEMENTARY WOOD TURNING AND PATTERN MAKING. Consists of instruction in the use and care of lathe and tools, and in making a series of problems which give familiarity with the principles involved in both turning and pattern making. Each problem introduces a new tool process and a careful study is made of the relation between the tool and the revolving wood. The student is taught the meaning and necessity of draft; the use of core prints, and making of core boxes; shrinkage of iron and other metals; its effect on different shapes and thicknesses of castings; how to join lumber to prevent warping and shrinkage of patterns; the use of segmental work; the meaning of such terms as fillet, boss, flange, rib, web, etc. Lectures and demonstrations will occur at frequent intervals. Finishing will receive its proper attention. Each pattern made will be molded by the student making it; thus any error will be brought to the attention of the student, that he may correct it. Prerequisite, course 1. Four hours credit.

Course 7.—ADVANCED WOOD TURNING. A course designed for those who may desire to master some of the more difficult problems in turning. Some spindle work is given, but the work is chiefly face plate and chuck work, in which problems are given involving accurate fitting of parts, such as boxes and mirror frames. Built-up and inlay work also receives attention. Instruction and practice in finishing—staining, dyeing and polishing—receives a large place in this course. Prerequisite, course 5. Four hours credit.

Course 9.—FURNITURE AND CABINETMAKING. A continuation of course 1, devoted largely to teaching the principles, the use and care of the tools and machines with which the cabinent maker works. Emphasis is placed upon the construction of period furniture with modern adaptations, including caning, upholstering with leather, tapestry, etc.; inlaying and veneering—both flat and curved. This is a course restricted to those with a high degree of manipulative skill and a keen appreciation of good design. Prerequisite, courses 1 and 5. Four hours credit.

Course 11.—ELEMENTARY WOOD WORK. This is a beginners' course, and planned chiefly for teachers in town and rural schools. It consists of instruction in the use and care of the simple hand tools and principles of simple construction. Enough drawing is taught to familiarize the student with the elementary principles underlying the production of a working drawing, and enable the worker to readily read blue prints and other drawings. Some study is also made of the common kinds of woods and of simple methods of finishing, as staining, shellacking and waxing. Two hours credit.

Course 13.—Veneering and Inlaying. This will be a complete course, and will familiarize the student with the process of veneering from the standpoint of utility as well as the more artistic phase of the work. All teachers of wood work and others experienced in the handling of woodworking tools, will find this course very useful and interesting. The work will include the study of materials, the selection and treatment of the different kinds of veneers; the use (possibilities and limitations) of various glues—animal, vegetable and waterproof; the preparation of materials, involving matching, jointing and taping of veneers; treatment of core and cauls; the rubbing method and application by pressure to curved or plane surfaces; inlaying of lines, borders and inserts, with the possibility of making and laying some simple decorative pieces of marquetry; the handling and further preparation of veneered surfaces for finishing. The old and new methods of laying veneers will be practiced or demonstrated. All work will be practical in its nature, suggestive and helpful to any one who wishes to make use of veneering in his school. The theory will be practiced on small objects, such as plain and fancy panels, checkerboards, picture frames, tray bottoms, lap boards, sewing or other small boxes, and clock frames.

Course 15.—Elementary Wood Finishing. Includes the finishing of a series of small panels of different kinds of woods; a study of different kinds of stains, each in relation to the character of the wood, its formula and its application; the relative values of oil, shellac, wax and varnish under varying conditions. Care and upkeep of the finishing room; care and use of brushes, cups, pails, and rubbing materials. The latter part of the term's work will ge given to the finishing of small projects. Four hours credit.

Course 17.—Farm Mechanics. A course involving work in wood, metal and concrete, and includes the making of such projects in wood as work bench, wagon jack, singletree, evener, poultry appliances and concrete forms; in concrete, one or two projects each in plain and reinforced construction; in forging, a series of projects adapted to farm use and embodying simple principles, as drawing out, upsetting, bending and forming, welding, plow sharpening, and die work in threading bolts, nuts, etc. Some study is made of suitable equipments for farm use, including cost, source of supply, etc. Students of agriculture and those teaching in rural and in county high schools will find this a profitable course. Four hours credit.

Course 19.—Framing. Tools and their uses; building of simple structures, as sheds, poultry houses and garages, and, when possible, a small house; sills, studding, roof framing; scaffolds; outside and inside finish. Four hours credit.

Course 21.—Mill Work. This course emphasizes the practical work of power machinery. The shop is equipped with universal saws, band saws, jointers, planers, mortisers, shaper, tenoner, belt-sander and gluing facilities. The practical work includes cutting of stock for construction in mill-work problems, such as work benches, science tables, chairs, desks, book cases, doors and screens. The shop is organized as a producing factory in which economy of production is the dominant feature. A course open only to those of proven ability. Prerequisite, courses 1 and 9. Four hours credit.

Course 23.—Technology of Woodworking. A study of the structures and properties of wood; characteristics and distribution of the common species; the growth and care of woods in the forest; source of supply and markets; lumbering, sawmilling; woodworking tools; fastenings—common joints, nails, screws, bolts, cabinet hardware; glue—kind, strength, manufacture. Prerequisite, courses 1 and 9. Two hours credit.

Course 25.—SAW FILING AND CARE OF MACHINERY. A study of saw filing, including filing, setting, swedging and gumming of different kinds of saws; makes as to characteristics and quality; files—kinds and use; knife tool sharpening and adjusting; woodworking machines—manufacturers' power and power transmission, speeds, bearings, care and repair; shop planning and installation of machinery. Prerequisite, course 1. Two hours credit.

Course 55.—CARPENTRY. This course is planned to give the student a practical working knowledge of house construction. The construction work consists of the actual construction of a house on a permanent site, or a section of a house in the shop, the students placing and leveling sills and floor joists, erecting walls, plumbing walls, cutting and placing common, hip and valley and jack rafters; framing porch, etc. The square being used to frame all work, it is essential that every workman should have a thorough and practical knowledge of its capabilities and applications, and this course is to aid in acquiring that knowledge. Enough outside finish, such as cornice work, shingling, setting frames, siding, and porch finish, is given to acquaint the student with the best methods of commercial practice. Additional practice offered in cutting and placing jambs, fitting and hanging doors and sash, inside finish, fitting hardware, laying and scraping floors. Especial emphasis is placed upon stair work, laying out, cutting and placing rough stringers for steps; mode of laying out ordinary straight stairs; laying out winders; finishing with risers, treads and skirt boards; method of laying out and working hand-rails for quarter-turn and winding stairways. Prerequisite, courses 1, 5, 19, 21. Four hours credit.

Course 57.—ADVANCED PATTERN MAKING. Students who have completed elementary pattern making, or who have had commercial practice, may take up the work of this course. The aim is to assign patterns that will supply the individual needs of the student as far as possible. Patterns for complete machines, such as lathe, drill press, gas engine, etc., make up the work of the course. Four hours credit.

Course 59.—ADVANCED WOOD FINISHING. A course designed to meet the demand for a more exhaustive knowledge of the subject than course 13 affords. It deals chiefly with French polishing, varnishing and rubbing. It includes correct preparation of surfaces for securing best results; making and correct use of polishing pad, formulas for polish and their application. The application and treatment of varnish is one of the "tricks of the trade." A knowledge of the trick may be had here in the finishing of new and the refinishing of old pieces of furniture. Work also given in interior house finish. A practical and valuable course for either industrial arts teachers or those working at the trade. Prerequisite, course 13. Four hours credit.

CONCRETE WORK.

Course 1.—CONCRETE. The course is designed to meet both the needs of the rural and city schools. It is a study of the history and development of cement, concrete aggregates and cement, form building of wire, wood and plaster of Paris, reinforcing and finishing. The projects are such as can be made in any school, and consist of sidewalks, posts, "V" and semicircular-shaped troughs, flower boxes, garden seats, urns, vases, dog kennels, etc. Prerequisite, course 1 in woodwork. Two or four hours credit.

PRINTING.

Experience has shown that printing can be made a vital force in the teaching of English. This concrete application of the rules of good English fixes them in the pupil's mind in such a way that he seldom forgets their use.

Printing being the fifth industry in the United States in the number of people engaged, the public schools are justified, if not under obligation, to make provision whereby every boy may learn something of this great industry. Its value as a prevocational as well as a vocational subject has been proven.

Course 1. Takes up the elements of printing, such as the study of type, printer's measure, type cases, proof reading, the press, etc. Mechanical operations are emphasized. Practical work is given in general typesetting and operating the press. Four hours credit.

Course 2. This is a continuation of course 1, in which design is emphasized. Practical work is offered in color printing, selection of paper stock, composition of letterheads, envelope forms, business cards, programs, and books, and the making of wood cuts. Throughout the course there will be discussions on what to print in our public schools and how to proceed. Prerequisite, course 1. Four hours credit.

INDUSTRIAL ARTS DRAWING.

Course 1*a*.—SKETCHING AND DESIGN. A course designed to develop appreciation of good design and ability to express, freely, quickly and truly, by means of pencil and blackboard perspective. One hour credit.

Course 1*b*.—ELEMENTARY MECHANICAL. The principal objects to be attained in this course are a thorough grounding in the fundamental principles underlying good working drawings, and ability to execute neatly and accurately. One hour credit.

Course 2.—FURNITURE DESIGN. The dominating purpose throughout this course is to stimulate in the student a conception of furniture as an expression of beauty. The course consists of a series of problems from the design of simple chairs and tables to more complex types of furniture. Emphasis is placed upon the development of types with modern adaptations. Rendering in colors is a feature. Prerequisite, courses 1*a* and 1*b*. Two hours credit.

Course 3.—PROJECTION DRAWING. A course leading up to and dealing with the elements of machine drawing. Fundamentals of projection are emphasized in problems dealing with revolutions, sections, intersections, development of surfaces; isometric and cabinet projections; the development of various curves; helix and application in V and square threads, conventional thread, bolt and nut; free-hand sketching of machine parts. Two hours credit.

Course 4.—MACHINE DRAFTING. A course to familiarize the student with commercial drafting-room practice. A large amount of time given to the making of free-hand sketches from castings and machine parts; detailed and assembled drawings, tracings and blue prints. Prerequisite, course 3. Two hours credit.

Course 5.—ADVANCED MACHINE DRAWING. A course planned to meet the needs of those who teach in the more advanced high schools and those who may wish to engage in commercial shop drafting. The course deals largely with the theory applied in practical work in the transmission of power by means of belt and rope drives, cams and crank motions, gears—spur, rack and pinion, worm gear, internal gear; graphics, and the design of special apparatus. Prerequisite, courses 3 and 4. Two hours credit.

Course 51.—MACHINE DESIGN. Problems in machine design. The application of equations of formulas to problems under construction, with a study of the materials used. Calculation of stresses and strains in the design of engines, etc. Sketching and drafting intricate machinery, with assembled and detailed drawings. Bill of materials, tracing and blueprinting. Prerequisite, course 50. Two hours credit.

Course 6.—AUTOMOBILE DRAWING. This is an intensive course, planned especially for automobile mechanics, giving drill in free-hand sketching, the use of drawing instruments and practice in reading charts and blue prints. The automobile is the source from which all practice is derived. The aim is to give the mechanic the greatest amount of work in the least time, which bears directly upon his major work. Two hours credit.

Course 7.—PLUMBING TRADE DRAFTING. A course planned for those following the plumbing trade and aiming at familiarizing the student with those architectural drafting conventions that are necessary in the plumbers' trade. The course includes the making of floor and wall framing plans; details of wall construction; floor plans, showing location of plumbing fixtures; basement plan, showing location of sewer outlet; a vertical section of house, showing drain and stacks, heating boiler, mains and risers. Details of fixtures and all necessary connections are shown. Prerequisite, course 1. Two hours credit.

Course 8.—SHEET METAL TRADE DRAFTING. Drawing forms a very important part in a sheet metal course. Preceding the making of a pattern for any problem in sheet metal work, a working drawing of the article must be made. The work consists essentially of the development of full sized detail drawings; in order that the student may understand the operations involved in developing the surfaces of a solid, a knowledge of geometrical and projection drawing is necessary; hence the student must be familiar with the principles involved in courses 1 and 3. Two hours credit.

Course 9.—APPLIED DESIGN. A study of the principles underlying good design—line and space composition, rhythm, proportion, and color harmonies. This course is planned chiefly for those taking the work in arts and crafts, as clay work, cardboard construction, bookbinding, basketry, art leather, jewelry and hammered copper.

Course 55.—DESCRIPTIVE GEOMETRY. A course intended chiefly for those who desire to specialize in mechanical drafting. Solutions of problems relating to point, line and surface, with intersections and developments and their application to practical shop problems. Two hours credit.

METAL WORK.

Course 2.—ELEMENTARY FORGING. This course includes the construction of different kinds of forges, care of the fire, selection of coal and the making of coke; proper use of tools; heats for the working of different materials; exercises in drawing out and upsetting; the making of welds; practice in bending and forming, fullering and swaging, drilling and riveting, heading and thread cutting. Four hours credit.

Course 4.—FARM FORGING. A course designed to serve the farm community in the care and repair of farm machinery. It includes instruction in building and care of the fire, the correct use of hammer, tongs and anvil tools; the making of simple forgings, as bolts, hooks and clevises; the sharpening and tempering of plowshares, cultivator teeth, etc. Helpful suggestions and advice concerning the equipment for a farm shop. Two hours credit.

Course 6.—AUTOMOBILE FORGING. This is a special course for those students who are specializing in automobile work. It is a brief course dealing with the elements of forging and the making of such tools as are needed for garage work.

Course 8.—ART SMITHING AND ORNAMENTAL FORGING OF ANDIRONS, FIRE SETS, LANTERNS, LAMPS, CANDLESTICKS. Designs are worked out in design department. To be admitted to this course students must show ability and adaptability to do this work. Prerequisite, course 1. Four hours credit.

Course 10.—BENCH AND ELEMENTARY MACHINE SHOP PRACTICE. This course is planned to give the student the correct idea as to the use of hand and small machine tools, the theoretical and practical work for the beginner. It consists of a series of exercises on the bench, such as chipping, filing to fit, laying out, centering and machine drilling, scraping to a surface, tapping and threading with hand dies. From bench work the student receives a good insight as to the work done on the machine. Elementary work on the machine consists of taking of notes relative to the working speeds and feeds of machine in different metals, also the grinding of drills and tools for several metals to get the best results from these grindings. The practical part of this course is the use of all lathes, planers, shapers, drill presses, saws and plain milling machine work. In lathe work we do straight cylindrical taper turning, and boring, shouldering, parting, chuck work; the cutting of single, V and U. S. standard threads; hand-turning and knurling. Planer and shaper work consists of straight, angle and oval cutting, key-seating and slotting. In milling work we do plain-end, face and straddle milling, slotting, sawing and key-seating. Prerequisite, course 2. Four hours credit.

Course 12.—GENERAL MACHINE SHOP PRACTICE. This course is a continuation of course 4, designed for the student's use in machine construction, millwrighting and general repair work. Machine construction is the making of small machinery, instruments and tools, the cutting of multiple threads on the lathe; also square, worm and acme threads; the use of the universal milling and grinding machines, such as using the dividing head, plain and different indexing, vertical milling and slotting; making spur, spiral, bevel and worm gears, and plain and cylindrical grinding on the grinder. Prerequisite, course 10. Four hours credit.

Course 50.—TOOL AND DIE MAKING. Tool and die making is more advanced work in shop practice. In this course mathematics plays an important part. The practical part consists of the making, annealing, hardening and tempering of all milling machine tools or cutters and of the hand tools, such as mandrels, taps, dies, reamers, drills and all necessary small tools. Internal grinding is also given, and the making of jigs. Die making consists of the making, annealing, tempering, etc., of dies and punches for practical use on our punch press. Prerequisite, courses 10 and 12. Four hours credit.

Course 14.—SHEET METAL. An elementary course involving simple problems which give practice in the processes of cutting, wiring, grooving, riveting, seaming, forming, edging, filing and soldering. The tool and machine processes used in the construction of these problems is the basis of the mechanical part of the sheet-metal trade. Four hours credit.

Course 16.—FOUNDRY. Lectures are given on the following: Foundry terms, tools and flasks, molding sand, green sand molding, facing, core sand and mixtures, binders and cores, metals and pressure in molds, core ovens, fluxes, and their uses, brass furnaces, etc. Demonstrations of molding: green and dry sand molding and loam work, ramming, venting, parting, gateing and other practical processes. Molding practice: cutting and tempering of sand, two and three-part and check-flask work, bedding in, sweep work and open-sand molding. Core making: mixing core sand, making, baking and setting cores. Use of brass furnace: firing, melting, mixing, skimming and pouring nonferrous metals Cupola practice: lining, making bottom and breast, drying, firing, charging, mixing metals and melting, pouring, skimming and chipping castings. Four hours credit.

ARTS AND CRAFTS.

Course 1.—**ART LEATHER.** This craft presents unlimited possibilities and the work possesses the charm of variety that is given to original design. The processes of tooling, modeling and coloring will be taught in executing designs on useful articles. Two or four hours credit.

Course 2.—**ART METAL.** This craft affords an opportunity for individual expression in copper and brass. In the making of trays, desk sets, bowls, etc., students will acquire a knowledge of the basic principles and processes. Two hours credit.

Course 3.—**JEWELRY.** This course carries the student through the elementary steps of saw-piercing, etching, soldering and stone-setting. Open only to those who have had art metal. Two or four hours credit.

Course 4.—**ELEMENTARY BASKETRY.** Making of simple pieces in reed and raffia, in which design is an important feature. Two hours credit.

Course 5.—**ADVANCED BASKETRY.** Advanced problems in reed and raffia, and pine needle and Japanese matting baskets. Prerequisite, course 3. Two hours credit.

Course 6.—**BOOKBINDING.** Includes simple problems in portfolio, notebooks, blank books, the binding of magazines and the mending and rebinding of books. Two or four hours credit.

Course 7.—**ELEMENTARY CLAY WORK.** This course involves the making of tiles, bowls, vases, etc., by building piece upon piece, also modeling in mass. Two hours credit.

Course 8.—**ADVANCED POTTERY.** In this course pieces are made by throwing or casting. Practical experience is given in glazing and firing. Open only to those who have had elementary pottery. Two or four hours credit.

Course 9.—**WOOD CARVING.** Work in both soft and hard woods. Historic units and strap work are used in the carving of tie racks, hand mirrors, chair backs, etc. Original designs in relief, round and incised work. Two or four hours credit.

Foreign Languages.

SAMUEL J. PEASE, M. A., Head of Department.
* ERNEST BENNETT, B. S., Instructor in French and Latin.
INA L. HILL, Ph. B., Instructor.

In a very real sense, he who knows only his own country knows no country; he who knows only his own language knows no language; he who knows only one age knows no age. In addition to the gain in perspective, the study of foreign languages, especially in a normal college, should result in readiness in understanding the printed page, and elegance, accuracy, judgment and clearness of expression, as well as a conversational use of modern languages.

An increasing number of Americans are coming into close contact with the French people, the French language, and French ideals through the activities of war and reconstruction, the interchange of students and teachers, the wider range of diplomacy, commerce, and the public-service professions.

The rapid growth of opportunity in every line in Spanish America demands more and more the study of the language, culture and modes of thought of its peoples.

Latin is *par excellence* the teacher's language, since from or through it have come mainly the foundations of modern thought, language, and institutions.

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* On leave as Y. M. C. A. secretary in France.

German is of value for scientific purposes.

A major in languages may be made in Latin and Modern Languages, in Modern Languages, or in Romance Languages. Latin 1 and 2, French 1, German 1, and Spanish 1 will not be counted toward a major.

FRENCH.

Course 1.—ELEMENTARY. Fraser and Squair's French Grammar, Part I, and Reader, and about 100 additional pages of easy reading. Emphasis on verbs and pronouns. Phonetics after the LeDaum method. Composition. Conversation daily. Five hours credit.

Course 2.—INTERMEDIATE. Fraser and Squair, continued. Modern narrative prose and one easy play. Written exercises, conversation, dictation; introduction to French life. Five hours credit (or three on consultation with the instructor).

Course 3.—MODERN PROSE AND POETRY. Reading, conversation, free composition. Three hours credit.

Course 4.—CLASSICAL DRAMA. Introduction to Corneille, Molière, Racine. Conducted in French. Prerequisite, course 2. Three hours credit.

Course 5.—WAR FRENCH. Sous les Armes, At West Point, magazines, official documents. Prerequisite, two years of high-school French or equivalent. Three hours credit.

Course 6.—MAETERLINCK AND ROSTAND. French and Belgian ideals in the earliest years of the twentieth century. Conducted mainly in French, but with careful translation of selected passages. Prerequisite, course 3, 4, or 5.

Course 7.—FRENCH LITERATURE BEFORE HUGO. Open lectures on the more important topics of French literature from its beginning to the close of the Revolutionary period.

Course 8.—FRENCH LITERATURE SINCE HUGO. One hour credit.

Course 9.—SCIENTIFIC FRENCH. Daniels' Reader, magazines, monographs. Translations and summaries. Two hours credit.

Course 12.—CONVERSATION AND COMPOSITION. Conversation (Pattou) and free reproduction of stories. Two hours credit.

Course 51.—ELEMENTARY COURSE FOR JUNIORS AND SENIORS. More rapid than course 1, assuming a knowledge of some other foreign language. Five hours credit.

Course 53.—HUGO. A careful study of his life and various fields of endeavor in literature. Four hours credit.

Course 54.—MOLIERE. Reading of all his most important works and careful study of his life and times. Four hours credit.

GERMAN.

Course 1.—ELEMENTARY. Bagster-Collins: First Book in German, lessons I to XXV; Bacon's Vorwaerts. Conducted mainly in German, but with frequent translation into English. Emphasis on forms and agreement. Five hours credit.

Course 2.—INTERMEDIATE. Bagster-Collins completed. Reading of one simple play and about 200 pages of simple prose and poetry. Memorizing of songs and poems. Free reproduction of anecdotes, poems, and stories. Five (or three) hours credit.

Course 3.—MODERN READINGS. Prose and poetry. Conducted mainly in German. Extensive reading of such authors as Storm, Keller, Grillparzer, Raabe, Heyse. Three hours credit.

Course 4.—CLASSICS. Schiller's Wilhelm Tell, Goethe's Hermann und Dorothea, Lessing's Minna von Barnhelm. Prerequisite, courses 1 and 2, or equivalent. Three hours credit.

Course 9.—SCIENTIFIC GERMAN. Reader, monographs, magazines. Translations and reports in English. Open to those who have had three semesters of college German; to others by special permission of the department. Two hours credit.

Course 12.—ELEMENTARY COMPOSITION. Composition (Allen), conversation (Pattou). Completion of this course should enable the student to converse on most topics of everyday life. Should follow or be taken with course 2. Two hours credit.

Course 51.—SCHILLER. Jungfrau von Orleans, Maria Stuart, poems. Prerequisite, four semesters of college German. Four hours credit.

Course 52.—GOETHE. A study of Goethe's life, experience, and philosophy. Reading of part I of Faust, with a study of part II and the Faust literature. Prerequisite, four semesters of college German. Four hours credit.

LATIN.

Special attention is called to the difference between courses 1 and 11. Course 11 is a vocational course for those teachers who feel the need of a Latin foundation but have not time for a longer course. It is intended to give an acquaintance with those features of Latin which most directly concern our daily life, teaching, and reading.

Course 11.—LATIN IN ENGLISH. A brief study of the influence of Latin on modern languages, especially English, from the standpoint of vocabulary, orthography, grammar, rhetoric, literature, law. Lectures, exercises, and assigned readings. Two hours credit.

Course 1.—ELEMENTARY. Corresponds to courses I and II in high school. Five hours credit.

Course 2.—CÆSAR. Corresponds to courses III and IV in high school. Five hours credit.

Course 3.—CICERO'S ORATIONS. Intensive study of Catiline I and IV, Manilian Law, Archias. Rapid reading in other orations. Composition, rhetoric, Roman public life. Five hours credit.

Course 4.—VERGIL'S ÆNEID. Four books, with rapid reading of others. Mythology, scansion, memorizing of about 100 lines. Five hours credit.

Course 5.—LIVY. Selections from Books I, XXI, and XXII. Follows Cicero or Vergil. Three hours credit.

Course 6.—CICERO'S PHILOSOPHY AND LETTERS. De Amicitia, De Senectute, selected letters, advanced composition. Study of Cicero the man. Roman private life. Prerequisite, 8 hours beyond course 2. Three hours credit.

Course 7.—HORACE. Odes and Epodes, selected. Two hours credit.

Course 8.—HORACE. Satires and Epistles. Two hours credit.

Course 51.—SUPPLEMENTARY LATIN AND COMPOSITION. A study of the Latin used as supplementary reading and of high-school composition. Prerequisite, courses 5 and 6. Two hours credit.

Course 61.—TEACHERS' COURSE. Objects, arguments, ways and means, knotty points, texts, illustrations, equipment. Prerequisite, eight hours beyond course 2. Two hours credit.

Course 62.—PRACTICE TEACHING IN LATIN. Open to seniors who have had 10 hours beyond course 4. Three hours credit.

SPANISH.

Course 1.—ELEMENTARY. Hills and Ford's First Spanish Course, Bergé-Soler and Hatheway's Spanish-American Reader. Forms and syntax; practice in speaking and writing. Five hours credit.

Course 2.—INTERMEDIATE. Hills and Ford, completed. Extensive reading and conversation. Idioms and subjunctives emphasized. Five (or three) hours credit.

Course 3.—MODERN NOVEL. Extensive reading of a more advanced type. Conversation and narrative. Conducted in Spanish. Three hours credit.

Course 4.—MODERN DRAMA. Rapid reading of nineteenth century dramas. Conducted in Spanish. Three hours credit.

Course 5.—SPANISH-AMERICAN LITERATURE. Three hours credit.

Course 9.—COMMERCIAL SPANISH. Reading, correspondence, conversation. Three hours credit.

Course 51.—JUNIOR AND SENIOR BEGINNING COURSE. More rapid than 1. Five hours credit.

Course 53.—THE NOVEL. Study of its development. Four hours credit.

Course 54.—THE DRAMA. Comparison of the drama of the Golden Age with that of the modern period. Four hours credit.

Mathematics and Applied Mechanics.

Professor SHIRK.
Assistant Professor VAN DYKE.
Assistant Professor WRIGHT.
Instructor ALBAUGH.

SCOPE OF WORK. The department offers the usual courses in secondary and collegiate mathematics, and also many courses of an industrial and vocational nature. Some of these latter courses do not require an extended mathematical training as a prerequisite, and are intended to aid young men in shop problems and young women in the various vocations which they usually enter. Many of these technical courses have considerable mathematical knowledge demanded before they can be studied to an advantage, and consequently those courses which furnish the foundation for them are required as prerequisites. Each course has a statement of the purpose of the course and the other subjects required before entering it.

EQUIPMENT. The department has a good collection of models in wood and string, illustrating the various geometrical figures. The surveying equipment includes two engineer's mountain and mining transit theodolites, one engineer's wye level, one architect's and builder's level, one farm level, leveling rods, range poles, tapes, planimeters, protractors, and other minor instruments and accessories.

Students of astronomy have the use of a 12-inch reflecting telescope of excellent optical properties. During the spring and summer terms the entire student body have an opportunity of viewing the moon and other celestial objects by means of this instrument.

The other industrial courses are rapidly being provided with drawings of machine parts, models of machines, and in many cases the actual machines, for illustrating the computations involved. For the study of calipers and the slide rule, large models are provided which are easily seen by the entire class.

LIBRARY. The library is well supplied with excellent books on mathematics, machinery, surveying, water supply, sewage disposal, and astronomy, besides a well-selected list of good magazines on these subjects.

ADVICE AS TO CHOICE OF COURSES. (*a*) Those wishing to qualify as teachers of mathematics in junior high schools by the end of the sophomore year are advised to take courses 1 to 6. (*b*) Candidates for the degree with mathematics as a major are advised to take courses 1 to 10, 20, 51, 52, and elect from the other courses offered such as may be desired. (*c*) Students majoring in physical science who expect to take advanced courses in physics and chemistry are advised to take courses 1 to 6, 11, 51 and 54.

Course 1.—PLANE GEOMETRY. The general properties of plane rectilinear figures; the circle and the measurements of angles; regular polygons; solution of numerous original exercises and practical problems. Open only to students not offering geometry for entrance. Three hours credit.

Course 2.—SOLID GEOMETRY. Elements of solid geometry; properties and measurements of surfaces and solids. Open to all students not offering solid geometry for entrance. Three hours credit.

Course 3*a*.—COLLEGE ALGEBRA. This course is open only to those students who have not taken algebra III in their high-school course. It includes a review of linear and quadratic equations, radicals, involution, evolution, progressions, logarithms, and imaginaries. Two hours credit.

Course 3*b*.—COLLEGE ALGEBRA. Rapid review of elementary algebra; graphic representation; complex numbers; series, logarithms; theory of equations; Horner's method. Three hours credit. Prerequisite, one and one-half units of high-school algebra, and one unit of geometry.

Course 3*c*.—COLLEGE ALGEBRA. This course is intended for students who have entered with only one unit of algebra. It includes a thorough review of elementary algebra and as many of the subjects of 3*b* as possible. It may also be taken by students offering one and a half units of elementary algebra, but for such students it will give only three hours credit. Five hours credit.

Course 4.—PLANE TRIGONOMETRY. The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two hours credit. Prerequisites, same as College Algebra.

Course 5.—ANALYTICAL GEOMETRY. The straight line; circle; elements of parabola, ellipse and hyperbola; polar coördinates; higher plane curves; elements of solid analytical geometry. Four hours credit. Prerequisite, course 4.

Course 6.—CALCULUS. Differential calculus: fundamental principles; derivatives; rates; applications to mechanics; maxima and minima; indeterminates; integral calculus: integration; definite integrals; applications to lengths, areas and volumes; moment of inertia; fluid pressure. The student is taught the use of tables of integrals in performing integrations. Five hours credit. Prerequisite, course 5.

Course 7.—INDUSTRIAL MATHEMATICS. This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks; mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; house building; power transmission; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit. Prerequisite, two units of high-school mathematics, one unit of physics, or an equivalent experience in mechanic arts.

Course 8.—Vocational Mathematics. This course is designed especially for women and contains samples of problems from all occupations that women are likely to enter, from the textile mill to the home. Food computations; house construction; house furnishing; dressmaking and millinery; arithmetic for office assistants, sales girls, cashiers and nurses; and a thorough drill in the metric and English systems of weights and measures. Three hours credit.

Course 9.—Teaching of Elementary Mathematics. Essential features of courses in arithmetic as far as the eighth grade. Principles and methods of teaching arithmetic and the allied mathematics of the elementary schools. The course will be presented with outlines with reference to historical material and the proper balance of abstract and concrete work. The aim is to study those topics likely to be introduced into the curricula of the first eight grades and to show how to relate arithmetic to the child's everyday life and his future needs. Three hours credit.

Course 10.—Mathematical Theory of Investment. A course for the students of business and public affairs. Interest, annuities, amortization, sinking funds and depreciation, building and loan, and life insurance. Two recitations per week. Two hours credit. Prerequisite, College Algebra.

Course 11.—Astronomy I. A general course in descriptive astronomy, dealing with the solar system and theories regarding its evolution; nebulæ; comets; meteors; measurements of the earth; determination of standard time. Two hours credit. Prerequisite, high-school algebra, geometry and physics.

Course 12.—Elementary Surveying. A brief course in the use of surveyors' instruments; laying out of walks, drives, ditches, and buildings; calculation of cuts and fills; elements of land surveying. Prerequisite, Plane Trigonometry. Two hours credit.

Course 13.—Mine Surveying. Instruments and methods used for underground traverse and connection surveys; shaft plumbing and special problems. Field work includes the survey of tunnels under campus and actual mine surveys. Prerequisite, Elementary Surveying. Two hours credit.

Course 14.—Topographical Surveying. Practice in taking topography by transit and stadia, triangulation, measurement of base lines. A topographical survey of an area is made and the resulting contour map constructed from the data obtained. Prerequisite, Elementary Surveying. Two hours credit.

Course 15.—Railroad Surveying. A study of the methods used in laying out and constructing railways, with field practice sufficient to familiarize the student with these operations; calculation of waterways; laying out of bridges, turnouts, and easement curves. Prerequisite, Elementary Surveying. Two hours credit.

Course 16.—Strength of Materials. A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shafting and reinforced concrete, resilience of materials. Two hours credit.

Course 17.—Mechanism. A study of the motion of machine parts and of methods of transmission of motion by means of links, belts, gears, and cams. This work is related closely to the machine motions used in the steam engine and various shop machines. Two hours credit.

Course 18.—Machine Design. Solution of problems in the design of general machine parts, including cylinders, plates, springs, riveted joints bearings, shafts, gears, pulleys, and belts. Lectures, recitations, and drawing. Prerequisite, strength of materials. Two hours credit.

Course 19.—SANITATION AND WATER SUPPLY. A study of the problems of water supply for rural homes and cities, with special reference to the cities of Kansas; purification of water; types of water systems, sewer systems and sewage disposal. Lectures and inspection trips. Two hours credit.

Course 20.—ELEMENTARY STEAM POWER PLANTS. A brief study of the general problems of steam power generation; fuels, combustion and steam generation; a study of boiler and engine types; engine mechanisms and power plant auxiliaries; laboratory practice in testing of steam machinery. Three hours credit.

Course 21.—THERMODYNAMICS. The relation between heat and mechanical energy; theory of heat engines; the action of vapors under the influence of heat and pressure. Two hours credit.

Course 22.—STEAM TURBINES. A special study of the different types of steam turbines with the auxiliary apparatus used with them. Inspection trips to power plants using these different types of turbines. Two hours credit.

Course 23.—HYDRAULICS. The study of the laws governing the action of liquids in pipes and their flow through pipes and over weirs. The types of pumping and hydraulic power machinery with special reference to the uses of pumps in removing water from mines. Three hours credit.

Course 24.—REFRIGERATION. A study of the construction and operation of the principal types of refrigerating machinery as used in cold-storage plants and in the manufacture of artificial ice. Inspection trips to plants using these types of machinery. Two hours credit.

Course 25.—SEWERS, ROADS AND PAVEMENTS. An elementary course in the design and construction of sewers and storm drains. The collection and distribution of the water supplies, with more detailed discussions of the apparatus used in purifying water and sewage. Two hours credit.

Course 51.—CALCULUS II. This course is intended for those who wish a better knowledge of calculus. It includes center of gravity; moments of inertia; center and radius of curvature; series; expansion of functions; successive and partial differentiation and integration; differential equations; hyperbolic functions; solution of higher equations; miscellaneous practical applications. Three hours credit. Prerequisite, course 6.

Course 52.—HISTORY OF MATHEMATICS. The growth and development of mathematics from the historical standpoint. The development of the applications of mathematics to practical affairs. This course also includes a study of the content of present courses in arithmetic, algebra, geometry, unified mathematics. Applied mathematics courses and their value in industrial education. Two hours credit. Prerequisite, fourteen hours of college mathematics.

Course 53.—ASTRONOMY II. A continuation of Astronomy I, involving a discussion of the quantitative measurements of celestial bodies. Some experimental work with the spectrometer in determining index of refraction, wave length, and elements in the sun. Observations of the apparent motions of the sun, moon and planets. Two hours credit. Prerequisite, Astronomy I.

Course 54.—THEORETICAL AND APPLIED MECHANICS. A study of the laws of statics and dynamics; action of forces upon bodies and the resultant motions; centers of gravity; moments of inertia; work and energy; impulse; momentum and impact; friction and lubrication; centrifugal force and the balancing of machines. Three hours credit. Prerequisite, course 6.

Methodology.

MRS. HATTIE MOORE-MITCHELL, M. A.
MISS BESSIE CARROLL.

FOREWORD.

The day has come when not only academic preparation but also efficiency in the art of instruction is considered a vital element in the qualification of a teacher.

COURSES OFFERED. There are six two-hour courses offered for 1919-'20.

PREREQUISITES. One semester's work in psychology is recommended before taking course in General Methods. Students enrolling in Normal Training Methods must have at least junior standing in the college course.

NOTEBOOKS. A well-arranged notebook in methods is frequently of more service to a teacher than the text. Notebooks are indexed and catalogued in such a way that additional material may be subsequently incorporated. Mimeographed copies of poems, drills, board designs, programs and bibliography are filed in an indexed clipping book, which permits future contributions after the course is completed.

EDUCATIONAL JOURNALS. The department carries several subscriptions for each of the different current educational publications, and articles relevant to the regular work or season are reviewed by class. A "speaking acquaintance" with these various journals is cultivated throughout the year. One quiz in each course is concerned entirely with reference to work from these journals.

ENTRANCE EXAMINATIONS. Teachers holding first-grade certificate and having had five years' successful experience may make application for entrance examination for two hours credit in grade methods. This application for entrance examination must be made within the first ten days from the first enrollment at the institution. This test, being based on experience rather than formal text, is not identical with the regular class work, and a teacher being granted this entrance credit by examination may with profit enroll in regular class work for the remaining two hours credit offered in the grade teachers' course.

EXTENSION AND CORRESPONDENCE WORK. The better part of a class recitation in methods depends upon the personal element. The actual material introduced as illustration, the demonstration (before the class), followed by comment and criticism, the standardization of one's effort, by comparison and contrast with the work of others, is impossible by correspondence; hence no method courses are offered except in residence work.

CHARTS, POSTERS, WALL DECORATION. The gathering of suitable material for charts when away from home is a task which does not bring proportional returns. The virtue of such work often lies in the correlation with other studies and the coöperation of home and school in securing material. On account of these two facts, the number of charts required from each student is reduced to the minimum and suggestive types are considered by use of blue-print copies of charts and posters which have been used in the schoolroom under normal conditions throughout the year. Each student compiles a portfolio of these blue prints for future suggestiveness.

PRIMARY TRAINING LEAGUE. This organization is instrumental in holding the fellowship among primary teachers after they leave college. The membership roll constitutes a mailing list and directory. The league made generous contributions last year toward paying for the mirror in the girls' rest room. It also maintains a Red Cross membership. Since its organization, three years ago, the place cards and invitations for the primary banquet at the State Teachers' Association have been designed and provided by the league.

CLASS SCHEDULES. During the earlier part of the session each student is provided with an individual schedule showing what is included in the work upon which his credit is based. Often if one knows the program in advance, several hours' continuous effort can be given to one line of work during Saturday or a holiday, which work otherwise would need be completed by piecemeal.

SPECIAL LECTURES. Each schedule provides for notes from a definite number of special lectures. These lectures are given by various members of the faculty, experienced teachers and out-of-city instructors. Often one specially trained and equipped is able, in one address, to accomplish more than is achieved through several routine recitations.

EQUIPMENT. Members of all method classes find it advantageous to own three blank notebooks, a box of water colors, crayola, scissors, transfer paper, ruler, roll of wall paper, ten-cent printing outfit. The above articles, together with patterns, etc., are kept in a so-called "work box" (a large pasteboard box provided each student). Time as well as effort in carrying material is saved by keeping this work box in the methods class room.

SUBSTITUTE RECITALS. Students in general methods and normal-training methods have the privilege of attending, during the semester, three recitations in other classes giving professional credit. A written report of such visit is made by the student, in lieu of note from methods recitation, from which he is excused. This excuse is granted before each absence, and no substitute recitation credit is granted without such excuse. Permission must also be granted by professor whose class is visited.

THESIS. For primary methods. In order that students considering course 6 may form some estimate of the range of material chosen for a thesis, the following list of subjects is cited from a portion of manuscripts added to the department by students completing this course.

Special-day program.
Recreation plans.
The last day of school.
Washington's Birthday.
Arbor Day program.
Through the Gates of Storyland.
Christmas in foreign lands.
Musical devices.
When company comes.
What I wish the teacher before me had done.
Glimpses into other teachers' schools.
Half-hours with boys and girls.
Parents' meetings.
Language in the third grade.
Psychology of an invitation.
The day of the program.
What to do the first day.
The primary teacher's trunk.
Decoration Day.
Difficulties in teaching spelling.
The primary teacher's notebook.
And the primary had a picnic.
Closing day program.
What a primary teacher ought not to see.
Parents, school and teacher.
Why school children are so parrotlike.
How my school keeps Hallowe'en.
Some things I must avoid in teaching.
Lincoln Day program.
My first day's experience as a teacher.
The ideal primary room.
Primary teacher's review and resolve.
Things in my childhood that have helped me understand my pupils.
The teacher's play-hour duty.
Lest we forget we once were primary people.
Beautifying the schoolground.
Essentials in playing a game.
Things I am going to do when I teach school.
Undesirable practices in the primary room.
Picture study: Its use and abuse.
The teacher's visit with the fairy.
Teachers in the schoolroom and in the college.
Elimination of waste in busy work.
Value of construction work.
Coördination of hand and head.
Current events in the primary.
Profitable blackboard work.
A "what-not" in every primary room.
Mothers' meeting with the primary teacher before school opens.
The primary teacher I remember best.
Report cards in the primary room.
"An incidental" for every day of school.
Twenty things I would pack in my trunk.
Outside activities of the primary teacher.
Survey of courses of study (from twenty Kansas schools) for first four grades.
Comparative table showing outline of first year's work from six different states.
Usefulness and uselessness of average class criticism.
Aids to punctuality in the primary.
Eighty questions gleaned from examination lists for state primary certificate in states issuing such.
Language and literature before the text is introduced.
Tabulated results from questionnaire dealing with vital elements of the primary teacher's work.

Course 1.—General Methods. Text, Thorndike's Principles of Teaching. One semester's work in psychology is recommended as prerequisite, although mature students with experience in teaching or high-school graduates from normal-training course may carry the work.

This course presents teaching as a scientific profession as well as a practical service in imparting information. The application of principles to the current educational problems is a dominant feature of the course. Previews in typewritten form enable the student in his study of the text to note points needing library reference or report from professional observation. Course is offered each semester. Students in this course are allowed three substitute recitations. (See Foreword: "Substitute Recitation.") Two hours credit.

Course 2.—Grade Teachers' Course. Freshman year, first semester. Text, Kendal and Mirick, Teaching the Fundamentals. Besides the text, discussions and investigations into course of study for elementary grades form a part of this course. Demonstrations of teaching difficult portions given in arithmetic, history and geography. Throughout the year special lectures are given, entitled "The hand as well as the head." From suggestions from these lectures each student prepares a certain number of articles suitable for hand work in the grades. Preceding the holiday vacation a "school bazaar" is held as class recitation, at which time these models are on exhibition, a placard accompanying each, giving amount and cost of material, time used in making, and grade for which suitable. This course is desirable work for rural teachers. (See Foreword: "Notebooks"; also "Entrance Examination.") Two hours credit.

Course 3.—Grade Teachers' Course. Second Semester. Text: McMurray's Handbook of Practice for Teachers. A continuation of course 2. Methods of presentation of physiology, grammar, orthography and reading by means of a review from teacher's viewpoint. Special lectures this semester relative to special days, decorations, recreations and experiments. From library assignments a methods manual is compiled, enabling the student completing this course to become a forceful factor in professional efficiency beyond the daily routine of simple textbook teaching. (See Foreword: "Equipment"; also "Educational Journals.") Two hours credit.

Course 4.—Primary Methods. First semester. While this course is essentially intended for candidates for special primary teaching, yet rural teachers will find the work profitable. A regular organization, known as the Primary Teachers' League, is maintained by students preparing for primary work. The course is enriched by library readings and special lectures. Each member of the class presents for approval a definite amount of work, charts and devices, in addition to notebooks, as credentials for grades. Primary reading; history and development of recognized methods; advantages and disadvantages claimed for each. Text, Klapper's Teaching Children to Read. Number work; requisites, aims, defects, devices, drills. Supplementary work. Two hours credit.

Course 5.—Primary Methods. Second semester. Continuation of course 4. Students may enter who have not completed first semester course. Subjects considered: Language work; specimens of work from distant schools; health lessons; rhetoricals; occupation work; "fads and theories." The league sessions during this semester will be addressed by outside educators. Preparatory to receiving credit from this course, applicant prepares discussion or demonstration of some phase of professional primary teaching. Manuscript of this discussion becomes the property of the department. (See Foreword: "Thesis for Primary Methods.") As in course 5, each member of the class prepares a certain number of models, charts and devices ready to be put into actual service. Through the kindness of faculty members in departments of music and physical education, valuable assistance will be given in preparation for primary music and recreation drills. (See Foreword: "Educational Journals.") Text, Gesell's The Normal Child and Primary Education. Two hours credit.

Course 51.—NORMAL-TRAINING TEACHERS' METHODS. Second semester and summer session. Open to students having at least junior standing. The introduction of normal-training courses into 350 of the accredited high schools of Kansas brings with it a demand for teachers who can take charge of the normal-training courses. Few schools have an enrollment warranting the services of a special normal-training teacher. As a result, the work must be given by one whose special preparation has been in other lines. The demand for this preparation is met in this course for normal-training teachers. The bibliography includes the normal-training course texts which are used in the various high schools of the state, together with outlines of work, also reviews covering normal-training literature edited by the state department. A series of lectures giving definite suggestions as to plans and policy in meeting the state course of study and examination tests for the candidate for normal-training certificate is a valuable feature of this course. Students taking this course will find any standard work on teaching a desirable reference text. Three substitute recitations are allowed during semester. (See Foreword: "Substitute Recitation"; also, "Equipment.") Two hours credit.

Music Department.

WALTER MCCRAY, Director.
ANTHONY STANKOWITCH, Piano.
MARGARET LEAVITT, Piano.
ELIZABETH HALLENBECK GILBERT, Voice.
INA MARIAN MCKNIGHT SCHIDE, Public-school Music.
RHETTA HESSELBERG, Violin.

ENTRANCE REQUIREMENTS.

For entrance to all courses leading to a degree or a diploma, the candidate for admission shall furnish proof that he is a graduate of an accredited high school in Kansas; or, if he be from another state, that he is a graduate of a high school accredited in the state from which he comes. Failing either of these, he shall furnish proof that he has completed fifteen academic units of high-school work or the equivalent.

COURSES LEADING TO A TEACHER'S CERTIFICATE.

The courses leading to a teacher's certificate in piano, organ or violin shall consist of the same subjects as for the first three years of the courses leading to a degree or a diploma, omitting the studies in the college and substituting therefor one hour per week, for two semesters, of normal training in the major subject, and one hour per week for two semesters, of practice teaching under the supervision of the normal training instructors.

CHILDREN'S DEPARTMENT.

In addition to our regular music courses it has been decided to offer a course in piano for children. A very competent teacher will be placed in charge, under the direction of the head of the Piano Department. The tuition will be $9 for eighteen lessons. Children under twelve years admitted.

COURSES LEADING TO A DEGREE.

All candidates for a degree shall offer at least twelve hours of theory and four hours of history of music.

All candidates for a degree offering major credits in piano, organ or violin shall also offer not less than fifteen hours of college work, of which at least ten shall be in English.

All candidates for a degree offering major credits in voice shall also offer not less than twenty-five hours of college work, of which not less than ten shall be in English, and not less than ten in modern foreign languages.

Piano, voice and violin, one lesson per week for a semester, with three hours' practice, leads to one semester hour's credit.

Those students majoring in music, and desiring their degree to be a life certificate to teach in the public schools of Kansas, must take the required hours in Education.

MAJOR. At least thirty hours will be required in the major in this course.

GENERAL INFORMATION.

1. All students must be enrolled before they can get their lesson assignment.
2. All lessons must be paid for in advance, or a written statement from the President extending time of payment.
3. Lessons missed on account of sickness will be made up, if the teacher or director of music is notified prior to the lesson period.
4. Lessons on dismissal days must be made up as arranged and announced by the department.
5. Piano, voice and violin are thirty-minute periods. Promptness is required so as not to infringe on the time of the following period.
6. The semester of eighteen weeks is divided into two music terms of nine weeks each, requiring an enrollment every nine weeks in all music subjects.
7. Department of Music of S. M. T. N. offers courses as complete as any of the leading conservatories of music. Every teacher is an artist in his special line, which gives students the advantages of a larger city.
8. Students will be admitted to this department at any time during the year, but advantages are generally better if entrance is made at beginning of semester.
9. Reasonable credit is given for all music work. Music may be an elective in any course in the institution.
10. There are several musical organizations in which talented students not in this department may take part. Among them: The Male Glee Club, the Polymnia Club, the Orchestra, the Band, and a Mixed Chorus.
11. Concerts are given during the year, and in the spring all organizations unite with musicians of surrounding communities for a week's "Spring Musical Festival."

MUSICAL ORGANIZATIONS.

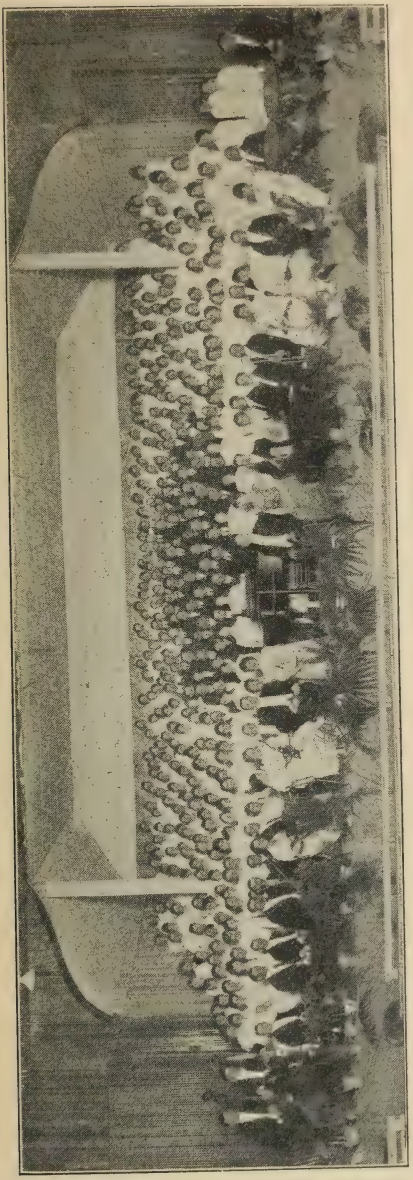
THE MALE GLEE CLUB. This club is chosen from the more able singers of the School. They meet twice each week.

THE POLYMNIA CLUB. This is the girls' glee club, whose organization is controlled in a like manner to the Male Glee Club.

ORCHESTRA. The orchestra is composed of students and musicians from the city, who have had years of experience. This organization gives concerts during the school year.

THE BAND. Those who have instruments and have had some experience are admitted to this organization.

THE CHORUS. The chorus is composed largely of the two glee clubs; however, it is open to all students who are able to sing and are somewhat proficient in reading music at sight. In this work, parts or the whole of the standard cantatas, oratorios, etc., are used, and the chorus very frequently appears in public during the year. The value of this practice cannot be overestimated, and it is indispensable to vocal students and school-music teachers. There is no expense connected with this work.



MESSIAH CHORUS.

RECITALS AND CONCERTS.

At frequent intervals during the school year public and private recitals and concerts are given in which all capable students are required to take part. These concerts are usually aided by the various student organizations, and are becoming very attractive features of the school year. Very frequently other concerts and entertainments by reputable artists are given in the Normal auditorium and the city, thus affording students an opportunity of hearing plenty of good music.

CLASSES AND ORGANIZATIONS FREE TO STUDENTS.

The Male Glee Club—rehearsals twice weekly.
The Polymnia Club (girls)—rehearsals twice weekly.
Orchestra—rehearsals once a week.
Band—rehearsals once a week.
Chorus practice—rehearsals as decided upon.
Public-school music, sight reading—recitations daily.

TUITION.

Term, nine weeks.

Piano, one hour lesson per week by Anthony Stankowitch	$22.50
Piano, one half-hour lesson per week by Anthony Stankowitch	13.50
Piano, one hour lesson per week by Margaret Leavitt	18.00
Piano, one half-hour lesson per week by Margaret Leavitt	9.00
Piano, one half-hour lesson, children 6 to 12 years, inclusive	4.50
Piano, two half-hour lessons, children 6 to 12 years, inclusive	9.00
Voice, one lesson per week (half hour)	9.00
Voice, two lessons per week (half hour)	18.00
Violin, one lesson per week (half hour)	9.00
Cornet and all brass and reed instruments, half-hour lessons, one per week	9.00
Harmony, class lessons	4.50
Harmony, private lessons	9.00
Piano rent, two hours daily for term, nine weeks	1.50

Those wishing to begin or to further improve their knowledge of the piano will recognize the unusual advantage in this department. Real finesse in execution and interpretation of the masters can be gained.

PIANO COURSE.

Special attention is given to laying a good foundation in the playing of each pupil. Every composition studied is analyzed, combining the theory and science of music with the technical development of the student. For the greater part of the piano curriculum the pieces are selected from the standard classical composers, although the modern school is not neglected.

The entire piano course is covered by five grades, namely:

1.—ELEMENTARY. Studies and pieces selected from the first and second grades. Five pieces played from memory.

2. PRIMARY. Studies and pieces selected from the second and third grades. Eight pieces played from memory.

3. JUNIOR. Studies and pieces selected from the third and fourth grades. Ten pieces played from memory.

4. INTERMEDIATE. Studies and pieces selected from the fourth and fifth grades. Twelve pieces played from memory.

A certificate is given to students passing the intermediate grade, first year history of music, and second year harmony.

5. SENIOR. Studies and pieces selected from the fifth and sixth grades. Twelve pieces played from memory.

A diploma of graduation will be awarded to those who pass the senior grade, second-year history of music, and third-year harmony.

Throughout the entire piano course a definite system of technical training is carried out, using the metronome to test the student's proficiency.

Classification of a student is based on actual efficiency; not on amount of time devoted to any grade.

VOICE COURSE.

FRESHMAN YEAR. Special attention is given to correct placement of the voice; a systematic course in breathing, sustaining tones, scales and exercises; true legato; a careful analysis of vowels and consonants in relation to vocal needs, sight singing; songs for phrasing and enunciation. The voice is greatly aided by the theory courses given in the Department of Music. Technical exercises from Marchesi Practical Singing Methods, Sieber Vocalises, Panofka, Abt, which form an excellent foundation. Easy songs with simple melody are given.

SOPHOMORE YEAR. A continuation of scales and exercises by Marchesi, Panofka, Concone, Sieber, suited to the needs of the pupils. Development of tone and breath control, exercises for flexibility emphasized. Songs by modern composers in English and Italian.

JUNIOR YEAR. Exercises by Marchesi, Lamperti, Marzo, Bordogni for flexibility, tone color, and true legato are continued. Special attention is given to stage deportment, style and interpretation. Songs of the seventeenth and eighteenth centuries, together with modern works, are analytically studied, preferably in the original text. A junior recital given by the students for credit toward a degree may be elective.

SENIOR YEAR. Exercises for bravura, singing from Marchesi, Lamperti, and Marzo for flexibility and artistic finishing of tone. Selections from oratorio and opera songs in modern Italian and French, standard English and American works. A senior recital given by the student for credit toward a degree is required. At frequent intervals public and private recitals are given in which all capable students are required to take part, thus preparing them for the concert stage, for church and public work. Senior recitals are given by special appointment.

VIOLIN COURSE.

Candidates for diplomas must be equal to the interpretation of solo sonatas by Bach, concertos by Vieuxtemps, Mozart, Wieniawski, Spohr, Mendelssohn, and some modern compositions, as Kreisler and Saint-Saëns.

It is impossible to write out exactly the course of studies pursued in this department. Each pupil will receive those exercises and pieces which the particular case requires. Candidates for certificates must give a good prformance of a piece approximating in technical and music difficulty works like concertos by Viotty and Rode, and they must have studied the etudes of Kreutzer and Dont, and the scales of Halier.

MUSIC SUPERVISOR'S COURSE.

The growing demand for thoroughly trained teachers and supervisors of public-school music has induced this School to establish this department as a special feature.

The supervisor's course not only requires a thorough knowledge of piano, voice, harmony, counterpoint, history of music, sight singing, chorus conducting, and orchestration, but each student must do practice teaching in the Model School under direction of critic teacher.

A class for benefit of grade teachers who desire a knowledge of the rudiments of music is organized each semester. Class meets daily and full credit is given.

FRESHMAN YEAR.

First Semester.	hrs.	*Second Semester.*	hrs.
Expression	3	History of Music (1 day)	2
Sight Singing (4 days)	2	Psychology	3
History of Music (1 day)	2	Voice	2
Voice	2	Piano	2
Piano	2	Harmony (2 days)	2
Physical Education (1)	1	Teaching 5, Lectures (1 day)	2
Teaching 5, Lecture (1 day)	2	Physical Education (2)	1
Harmony	2	Conducting	2
	16		16

SOPHOMORE YEAR.

First Semester.	hrs.	*Second Semester.*	hrs.
Voice	2	Voice	2
Piano	2	Piano	2
Harmony	2	Counterpoint	2
Electives	1	Chorus and Orchestra Conducting	2
Orchestration	2	History of Education	3
Chorus and Orchestra Conducting	2	Electives	1
Special Methods	2	Teaching	3
Management	2		
	15		15

On completion of the above course the student will be granted a special life certificate entitling him to teach in any public school, including all four-year high schools in Kansas.

Physical Sciences.

Professor YATES.
Assistant Professor EMERY.
Instructor COVENTRY.
Instructor BASS (on leave).
Assistant MATTHEWS.

The chemical rooms and laboratories occupy the north half of the third floor of Carney Hall. These rooms and laboratories are equipped with apparatus and supplies for the completion of a full college course in different lines of chemical work. There are four laboratories and one lecture room, in addition to a balance room, storeroom and office. The rooms for household physics, general science and geology are located on the east side of the north half of the middle floor of Carney Hall, and include a lecture room, laboratory, geology museum, and office. These rooms are equipped with apparatus and supplies for the proper presentation of these important subjects. The rooms for industrial physics are located in the industrial arts building, and are well equipped for industrial and engineering physics.

No lesson taught educators by the recent war is more apparent than that of the necessity of stressing the importance of science teaching in our schools, and also the great need of chemists and physicists in our manufacturing industries and commercial operations. Probably the most striking lesson of the war, not only to ourselves, but to our allies, was the absolute necessity for work of men trained in the chemical and physical sciences. Our growing commercial and industrial activities is creating a demand as never before for the services of men and women thoroughly trained in the practical courses, not only for teachers, but for those who desire to go into the various scientific industries of our country. See Industrial Engineering Division of this catalogue.

The increasing demand for teachers trained in the physical sciences, and especially those who are schooled in their application, is shown by the introduction of general science, domestic science and agriculture into the curricula of our grade and secondary schools, as well as chemistry and physics in our high schools. The department has arranged its courses so as to correlate with and furnish the scientific background for the student in home economics or industrial arts, together with academic and other scientific subjects. The department has provided courses for those who expect to teach in the grades as well as for those who expect to do departmental work in the grade schools and high schools of our state. In the description of the courses, which follow, their relation is readily seen; and further, that emphasis is placed upon the application of the principles studied in the different courses.

CHEMISTRY.

Course 1.—GENERAL CHEMISTRY. This course consists of lectures, recitations and laboratory work upon the fundamental principles of this science, together with the application of chemistry to the various arts and industries. Among the practical subjects considered are chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils and varnishes, water, air, fuels, and the elementary principles of chemistry in food preparation and other operations in the home. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. This course is not open to students offering elementary chemistry for admission. Laboratory fee for material used. Five hours credit.

Course 2.—INORGANIC CHEMISTRY. This course is built upon a course in elementary chemistry, and consists of lectures and recitations upon the more difficult principles involved in general chemistry, including such subjects as gas laws, the solution of chemical examples, nomenclature, principles of solution, etc. The application of chemistry to the varied needs of man is emphasized. Laboratory fee for material used. Two hours credit.

Course 3.—QUALITATIVE ANALYSIS. This course consists largely of laboratory work. Emphasis is placed upon the analysis and properties of those substances that are used in the industrial arts, as oils, pigments, paints, varnishes, fuels, and alloys. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

Course 4.—QUANTITATIVE ANALYSIS. This is principally a laboratory course, including both gravimetric and volumetric analysis, supplemented by lectures and recitations. The calibration of glassware and the study of the relation of chemistry to other sciences, along with the various vocations of life, are included in this course. Prerequisite, Chemistry 3. Laboratory fee for material used. Two or three or five hours credit, depending on the amount of work done.

Course 10.—FOOD CHEMISTRY. A special course for domestic science students. This course consists in the identification of food adulterants and preservatives, the effect of these upon the body, the analysis and relation of the different classes of foods, and includes a study of organic chemistry related to food. Prerequisite, Chemistry 1. Three hours credit.

Course 11.—AGRICULTURAL CHEMISTRY. This course is arranged for students of agriculture, and consists of a study of the chemical changes involved in soil fertility and plant growth, the analysis of various plant products and fertilizers, and the study of problems of agriculture of a chemical nature. Laboratory fee for material used. Two or three hours credit.

Course 15.—GENERAL SCIENCE. This course is planned for grade teachers, and consists of easy demonstrations, which may be performed by the teacher to illustrate some of the scientific principles involved in the study of such subjects as air, water, fire, food, clothing, etc., thereby giving the teacher preparation which will enable her to acquaint the child with its physical environment. Two hours credit.

Course 16.—HISTORY AND METHODS IN PHYSICAL SCIENCE. This is a course of lectures given by the different teachers in the department. These lectures consist of a nontechnical discussion of the most important discoveries in the physical sciences. The applications of these principles for efficiency is emphasized. One or two hours credit according to the work done. Prerequisite, 15 hours Physical Science.

Course 51.—ORGANIC CHEMISTRY. A general course in organic chemistry, including lectures, recitations and laboratory work. This course emphasizes the properties and uses of the organic compounds found in our industrial activities, together with the underlying chemical principles involved. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

Course 52.—PHYSICAL CHEMISTRY. This course consists of lectures, recitations, readings and laboratory work. The elementary principles of physical chemistry are studied in this course. Emphasis is placed upon a thorough understanding of the laws involved in general chemistry. The basic nature of these principles to the historical development of chemistry is considered. The aim is to lay a solid foundation for future work in the subject. Prerequisite, Chemistry 1, 3 and 4. Five hours credit.

Course 53.—ADVANCED QUANTITATIVE ANALYSIS. This course consists of careful analyses of ores, water, fuels, etc. Prerequisite, courses 1, 3 and 4. Laboratory fee for material used. Two or three or five hours credit, according to amount of work done.

Course 54.—INDUSTRIAL CHEMISTRY. As the name implies, this course consists of a study of various chemical industries and the part the chemist plays in the different lines of manufacture. Both organic and inorganic industries are included in the course. Prerequisites, Chemistry courses 1, 3 and 51 or their equivalent. Five hours credit.

Course 60.—TEXTILE CHEMISTRY. This course deals with the chemical examination and identification of the different textiles, and a brief study of dyeing. Prerequisite, Chemistry 1. Laboratory fee for material used. Two hours credit.

Course 61.—HOUSEHOLD CHEMISTRY. This course consists in the application of chemistry in the household, involving sanitation, cleaning and removal of stains. Prerequisite, Chemistry 1. Laboratory fee for material used. Two hours credit.

Course 62.—PHYSIOLOGICAL CHEMISTRY. This course consists of a study of the chemical changes involved in the cooking, digestion and absorption of foods; the chemistry of the blood and tissues of the body. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Laboratory fee for material used. Two hours credit.

Course 63.—CHEMISTRY OF NUTRITION. This course consists of a study of the composition of the different classes of food, their function in nutrition, dietaries, and food economy. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Laboratory fee for material used. Two hours credit.

PHYSICS.

Course 21.—PLUMBING AND PIPE-FITTING. A study of the fundamental principles of plumbing and pipe-fitting and of modern sanitary appliances for the home. The course includes designs and practice work as well as recitations and lectures. Prerequisite, high-school physics. Two hours credit.

Course 22.—HEATING AND VENTILATION. The principles of operation underlying the various modern systems of heating and ventilation installed in homes and school buildings form the basis of this course. It includes practical problems in the designing of heating and ventilating systems for buildings. Prerequisite, high-school physics. Two hours credit.

Course 23.—ELECTRIC WIRING. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Two or four hours credit.

Course 24.—ILLUMINATION. A practical course in the designing of illumination distribution for all purposes—home, school, business house, and street lighting. It includes a study of the various types of light sources, shades, and reflectors and their adaptability for various classes of service. Prerequisite, course 23. Two hours credit.

Course 25.—GAS ENGINE I. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics, industrial activities, or in automobiles. Laboratory and lectures. Prerequisite, high-school physics. Three hours credit.

Course 26.—GAS ENGINE II (AUTOMOBILE ELECTRICITY). A companion course to course 25. Electrical circuits of the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts. Prerequisite, high-school physics. Two hours credit.

Course 27.—ARMATURE WINDING. A practical course in the testing and repairing of defective and burned-out electrical machinery. Prerequisite, course 33. One or two hours credit.

Course 28.—ELECTRIC SIGNS. A practical course in designing and installing electric signs. Prerequisite, high-school physics. Two hours credit.

Course 30.—GENERAL PHYSICS. Designed for those wishing a brief course in college physics. It includes a rapid survey of all the branches of physics, interspersed with demonstrations and laboratory exercises, which will be of special value to those going out to teach high-school physics. Five hours credit.

Course 31.—MECHANICS AND HEAT. This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in building, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, high-school physics. Four hours credit.

Course 32.—SOUND AND LIGHT. Lectures and laboratory work in the general theory of sound and light. This course with courses 31 and 33 constitute the equivalent of a one-year course in college physics. Prerequisite, course 31. Two hours credit.

Course 33.—ELECTRICAL MACHINERY. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment, rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, high-school physics. Four hours credit.

Course 70.—THE TEACHING OF PHYSICS. Practice and theory. Texts, materials and methods for basis of study. Prerequisite, high-school physics or course 30. Two hours credit.

Course 71.—HOUSEHOLD PHYSICS. A course for girls interested in home economics. It includes an inquiry into physics as applied to the problems of sewage disposal, lighting, heating, ventilating, cooking, house cleaning, laundering, etc. A careful study is made of modern labor-saving, sanitary and economical appliances for the home. Prerequisite, high-school physics or course 30. Two hours credit.

Course 76.—Wireless Telegraphy. The theory and practice of radio-communication. Prerequisite, course 33. Two hours credit.

GEOLOGY.

Course 40.—Mineralogy. This is a brief course in the study of our common rocks and minerals. Easy physical and chemical tests for identification, together with crystal structure, is studied. The relation of the different types of soil and water as found in our state to that of the geological formations is emphasized. Two hours credit.

Course 41.—Geology I. This course is planned to acquaint the student with the work of the geologist and to enable him to appreciate the relations of this subject to our industrial life. Emphasis is placed upon the industrial and economic side of geology. Among the subjects considered may be mentioned the distribution and supply of fuels; the geologic processes in soil building; the raw material of many of our manufacturing industries; road building; and the making and reading of geologic maps, together with their economic value. Three hours credit.

Course 42.—Geology 2. This course begins with historical geology, and considers the lessons of history to be read in the different layers of rocks. Two hours credit.

Course 80.—Economic Geology. As the name implies, this course deals with the economic resources of the United States from the viewpoint of geology. The mineral products, as iron and the other common metals, clays, coal, oil and gas, building stones, cement materials, gypsum, fertilizers, water, and other products, are studied. The distribution of these resources, mode of occurrence, origin, uses, production and conservation are considered in this course. Two or four hours credit.

Physical Education.

Director Fuhrer.
Assistant Director Courtright.
Assistant Director Wiswell.

Design of Work. The department exercises supervision over the gymnastic, athletic and play activities in the institution, and offers courses in the theory and practice of physical education. The department aims to minister to the physical needs of all students through hygienic, educative and recreative activities. Certain special courses are designed to train students in the theory and methods of physical education. A life diploma is given at the completion of the regular two-year course.

A physical examination is given all students. Assignments in physical exercise are made on the basis of this examination.

Equipment. The department has a gymnasium in the main building, 50 feet by 50 feet. It is well equipped for the general gymnastic and floor work carried on by the regular classes. The basket-ball floor, situated in the auditorium, is 72 feet by 40 feet. Here the intercollegiate and interclass basket-ball schedules are played. Three locker rooms, supplied with steel lockers, are available for the students. The bathing facilities are ample. Outdoor activities are conducted on the athletic field, tennis courts, and the regular playground. The department is well supplied with the necessary equipment to make physical examinations, to give theory instruction, and render first aid. The library is supplied with books on physical training, athletics, both theory and practice, as well as related subjects.

MEN'S GYMNASIUM COSTUME. The uniform consists of long white gymnasium trousers, white athletic shirt, and white tennis slippers. These articles can be purchased at the retail stores in Pittsburg.

GIRLS' GYMNASIUM COSTUME. The gymnasium bloomers are of black serge (light weight), made full, plaited at the belt with plaits sewed down five or six inches, elastic at the knee. They may be made at home or bought at the dry-goods stores at Pittsburg. The middies are of white wash goods made regular navy style, with large collars, sleeves that may be rolled up, and with no color upon them anywhere. Woolen middies may be worn during the winter months. Black middy ties and black stockings are used.

For courses 1, 2 and 6 black ballet slippers for the dancing and white tennis shoes (camp fire) for the outdoor work are needed. For course 5 the ballet shoes only are used.

VOLUNTARY EXERCISE. From 4:20 to 6 p. m. each afternoon women students in the College or high school may come out to play basket ball, tennis, volley ball and baseball under the supervision of the physical director for women.

Interclass and intramural tournaments and leagues are held for both men and women students in the following games: Basket ball, volley ball and baseball.

The athletics of the school are directed by the athletic council, composed of five students and five faculty members. Teams are maintained in all major sports for men. There are no intercollegiate or interschool games for women.

Courses 1 and 2 are required of all freshmen in all courses for the life diploma.

Course 1.—PHYSICAL EXERCISE. This is a course of body-building nature.

Men: Three hours of exercise per week. One hour credit. The course consists of—

(*a*) One hour of outdoor games while the weather permits. One hour of corrective calisthenics and gymnastic dancing. One hour of apparatus work, pyramid building and tumbling.

(*b*) Elective work in intercollegiate athletics for the length of season only, in place of (*a*).

Women: Three hours of exercise per week. One hour credit. The course consists of—

(*a*) One hour of games, from simple to complex, taught for health and recreation of the student and in such a way that the student may use these games in any sort of playground work. The last of the term the coaching of basket ball, volley ball, baseball and tennis is given.

(*b*) One hour of folk dancing with the beginning of esthetic work.

(*c*) One hour of calisthenics, corrective in nature, dealing with common faults in posture and function of spine, thorax, shoulder, girdle, pelvis and feet.

Course 2.—PHYSICAL EXERCISE. Three hours of exercise per week. One hour credit.

Men: Continuation of work under (*a*) in course 1. At close of annual gymnastic exhibition all work is out of doors in track or baseball.

Women: Continuation of course 1, but more advanced. Prerequisite, course 1.

Course 3.—ELEMENTARY SCHOOL PHYSICAL EDUCATION. A course in physical education for the grammar grades. Courses 1 and 2 are prerequisites. The work consists of Swedish gymnastics for schoolroom use, gymnastic games, nursery rhymes, folk dances, and story plays. Class meets Tuesday and Thursday. Practice teaching in Training School at ten o'clock, Monday and Friday in schoolroom, and Wednesday in gymnasium. An elective course. Two hours credit. Given first and second terms and summer session.

Course 4.—PLAY AND PLAYGROUND METHODS. Courses 1 and 2 prerequisite. Play equipment and management will be considered. Drawings, estimates and specifications for such play apparatus as can be made by high-school manual-training departments, as given by Leland, forms part of the work. A graded course of games based on Bancroft's work, with emphasis on the many kinds of ball games, especially long base, playground ball, soccer, captain ball, volley ball, basket ball. The athletic badge competition, group athletic, and grade-school track meets form part of the instruction. A course for teachers who expect to do playground work in the graded school or supervisory work in the public schools. Open to men and women. An elective course. Two hours credit. Given first and second terms and summer session.

Course 5.—CLASSIC OR ESTHETIC EXERCISES. Prerequisites, courses 1 and 2, or equivalent. Material will be given which can be used for fete days, festivals and pageants. For women students. Elective. The course will continue throughout the year, with different work each term. Two periods weekly. One hour credit per term; two hours credit per year.

Course 6. Prerequisite, course 1 or 2, or equivalent. Different work each term throughout the year, based upon the outlines of courses 1 and 2, but more advanced. Three periods a week. One hour credit per term.

Course 8.—THEORY OF PHYSICAL EDUCATION. This is a course in the essential factors of physical education. The following topics are discussed: The physiology of exercise; massage; the systems of physical education; the practice of physical education on playgrounds, in schools and colleges; the physical education of the blind, the deaf, and mental defectives. Each student will be especially trained on the following points; nasal obstruction, abnormal sight and hearing, blood pressure, treatment of bad posture, and the efficiency tests. Prerequisite, courses 1 and 2. Text: McKenzie's Exercise in Education and Medicine. Elective. Three periods weekly. Three hours credit.

Physical training for the Senior High School consists of indoor and outdoor gymnastics, folk play, and games.

Physical training for the Junior High School consists of gymnastic lessons, rhythmic exercises, play, and games.

Public Speaking and Expression.

BURNA MCCULLOCH STRONG.

The work offered in this department is thoroughly educational and practical. The department takes the view that having something to say is not sufficient. A clear and accurate knowledge of how to transmit that something to the mind of the listener is a much more momentous problem. This the department seeks to accomplish by teaching the student how to frame his thought in such a manner that it will fall within the radius of the listener's experience and field of interest. The work is so handled that this principle is made as important to the teacher in presenting all of her subject matter as it is to the one who chooses to use it for the professional platform.

Course 1.—PUBLIC SPEAKING. This course traces carefully the change from ancient to modern oratory. The course is principally concerned with a study of the forms of discourse. Much practice is given the student in the preparation and delivery of his own thought before an audience. In this course ability to think on your feet before an audience is gained in a very short time. Three hours credit.

Course 2.—PUBLIC SPEAKING. This course shifts its attention more to the content and purpose of the speech. The general ends of speech are taken up, together with a careful study of the principles leading to the attainment of the ends. These principles are made clear to the student through the preparation and delivery of his own thought before an audience. These principles are as sound and practical pedagogically as they are in the art of speech making. Three hours credit.

Course 3.—FUNDAMENTALS OF ORAL EXPRESSION. This course is intended to develop for the teacher a pleasing voice, clear, distinct utterance, and the acquisition of ability to express thoughts effectively in the classroom. Special attention is given to voice placing, deep breathing, resonance, flexibility, inflection, emphasis, quality and melody in speech. Three hours credit.

Course 4.—INTERPRETATION. This course deals with the vocal interpretation of some of the best in literature, setting forth the principles of true interpretation. How to gain a glimpse of life, as set forth in the pages of the best literature, without intruding the individuality or opinions of the interpreter. Two hours credit.

Course 6.—LITERARY INTERPRETATION. This course is a continuation of Interpretation 4, and deals with more difficult literature. Two hours credit.

Course 5.—EXPRESSION. The literature which can be vocally interpreted is found in certain discoverable forms, which by their very nature demand a certain manner of interpretation. It is the aim of this course to familiarize the student with these different forms and their interpretation. The course also deals with pantomine, training the student to use and understand an expressive body. The work is so conducted as to prove of practical value to the teacher, both in instructing and disciplining the mischievous child who expresses most of his ideas through subtle actions of the body. Two hours credit.

Course 54.—MASTERPIECES. In this course some of the big masterpieces of literature are studied, giving special attention to the spiritual significance of the text. This course seeks to develop within the life of the student a realization of the impulses which have produced great literature. The Bible, Idylls of the King, and some of Browning's work is studied. Three hours credit.

Course 9.—DEBATE AND ARGUMENTATION. This course is intended to provide mainly instruction and practice in the preparation and delivery of argumentative work. While the work conveniently takes the form of debates, it is not the object of the course merely to train debaters. The course seeks rather to develop the student's power of concentration, discernment and judgment, teaching him to discriminate in the world of ideas between the chaff and the wheat. Two hours credit.

Military Science and Tactics.

MAJOR H. G. WEAVER, U. S. Army.

The primary object of establishing a unit of the Reserve Officers' Training Corps is to qualify, by systematic and standard methods of training, students at civil educational institutions for reserve officers. The system of instruction prescribed below presents to these students a standardized measure of that military training which is necessary in order to prepare them to perform intelligently the duties of commissioned officers in the military forces of the United States, and it enables them to be thus trained with the least practicable interference with their civil careers.

SENIOR DIVISION. Any male student of college standing over fourteen years of age is eligible to take this course in the senior division of the Reserve Officers' Training Corps. The basic course, for freshmen and sophomores, requires three hours per week; the advanced course, for juniors and seniors, requires five hours per week.

JUNIOR DIVISION. Any male student of high-school standing over fourteen years of age is eligible to take this course in the junior division. The work is practically the same as the basic course of the senior division.

UNIFORMS, EQUIPMENT, PAY. All students of both senior and junior divisions are furnished complete uniforms and equipment by the United States government. Uniforms must be worn at drill and may be worn at any time. Those students taking the advanced course attend a summer camp for one month, transportation and other expenses paid by the United States. These students also receive commutation of subsistence, which amounts to forty cents per day.

The schedule of training prescribes graded courses covering a period of four years, and instruction will be taken up as follows:

BASIC COURSE:
Freshman year, courses 1 and 2 (28 units).
Sophomore year, courses 3 and 4 (28 units).

ADVANCED COURSE:
Junior year, courses 5 and 6 (48 units).
Senior year, courses 7 and 8 (48 units).

COURSE OF TRAINING FOR INFANTRY UNITS OF THE SENIOR DIVISION.

BASIC COURSE.

1.—MILITARY ART. Freshman year, first semester. Three hours a week (counting 14 units).

(*a*) *Practical.* Weight, 10. Physical drill (Manual of Physical Training—Koehler). Infantry drill (U. S. Infantry Drill Regulations), to include the school of the soldier, squad and company, close and extended order. Preliminary instruction, sighting position and aiming drills, gallery practice, nomenclature and care of rifle and equipment.

(*b*) *Theoretical.* Weight, 4. Theory of target practice, individual and collective (use of landscape targets made up by U. S. Military Disciplininary Barracks, Fort Leavenworth, Kan.); military organization (Tables of Organization); map reading; service of security; personal hygiene.

2.—MILITARY ART. Freshman year, second semester. Three hours a week (counting 14 units).

(*a*) *Practical.* Weight, 10. Physical drill (Manual of Physical Training—Koehler). Infantry drill (U. S. Infantry Drill Regulations), to include school of battalion, special attention devoted to fire direction and control; ceremonies; manuals (Part V, Infantry Drill Regulations); bayonet combat; intrenchments (584-595, Infantry Drill Regulations); first-aid instruction; range and gallery practice.

(*b*) *Theoretical.* Weight, 4. Lectures, general military policy as shown by military history of United States, and military obligations of citizenship; service of information; combat (to be illustrated by small tactical exercises); United States Infantry Drill Regulations, to include school of company; camp sanitation for small commands.

3.—MILITARY ART. Sophomore year, first semester. Three hours a week (counting 14 units).

(*a*) *Practical.* Weight, 10. The same as course 2 (*a*). Combat firing, if practicable, but collective firing should be attempted in indoor ranges by devices now in vogue at United States disciplinary barracks.

(*b*) *Theoretical.* Weight, 4. United States Infantry Drill Regulations, to include school of battalion and combat (350-622); small-arms firing regulations; lectures as in (*b*), course 2; map reading; camp sanitation and camping expedients.

4.—MILITARY ART. Sophomore year, second semester. Three hours a week (counting 14 units).

(*a*) *Practical.* Weight, 10. The same as course 2 (*a*); signaling; semaphore and flag; first-aid. Work with sand table, by constructing to scale intrenchments, field works, obstacles, bridges, etc. Comparison of ground forms (constructed to scale) with terrain as represented on map; range practice.

(*b*) *Theoretical.* Weight, 4. Lectures, military history (recent); service of information and security (illustrated by small tactical problems in patrolling, advance guards, rear guards, flank guards, trench and mine warfare, orders, messages, and camping expedients); marches and camps (Field Service Regulations and Infantry Drill Regulations).

ADVANCED COURSE.

5.—MILITARY ART. Junior year, first semester. Five hours a week (counting 24 units).

(*a*) *Practical.* Weight, 13. Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises laid down for the unit or units. Military sketching.

(*b*) *Theoretical.* Weight, 11. Minor tactics; field orders (studies in minor tactics, United States School of the Line); map maneuvers. Weight, 8. Company administration, general principles (papers and returns). (Weight, 1.) Military history. (Weight, 2.)

6.—MILITARY ART. Junior year, second semester. Five hours a week (counting 24 units).

(*a*) *Practical.* Weight, 13. Same as (*a*), course 5. Military sketching.

(*b*) *Theoretical.* Weight, 11. Minor tactics (continued); map maneuvers. (Weight, 8.) Elements of international law. (Weight, 2.) Property accountability; method of obtaining supplies and equipment (Army Regulations). (Weight, 1.)

7.—MILITARY ART. Senior year, first semester. Five hours a week (counting 24 units).

(*a*) *Practical.* Weight, 13. Duties consistent with rank as cadet officers or noncommissioned officers in connection with the practical work and exercises scheduled for the unit or units. Military sketching.

(*b*) *Theoretical.* Weight, 11. Tactical problems, small forces, all arms combined; map maneuvers; court-martial proceedings (Manual for Courts-martial). International relations of America from discovery to present day; gradual growth of principles of international law embodied in American diplomacy, legislation, and treaties. Lectures: Psychology of war and kindred subjects. General principles of strategy only, planned to show the intimate relationship between the statesman and the soldier (not to exceed five lectures).

8.—MILITARY ART. Senior year, second semester. Five hours a week (counting 24 units).

(*a*) *Practical.* Weight, 13. Same as course 7 (*a*).

(*b*) *Theoretical.* Weight, 11. Tactical problems (continued); map maneuvers. Rifle in war. Lectures on military history and policy. It is presumed that each member of the Reserve Officers' Training Corps during his academic course has taken one course or equivalent credit in either French or German or Spanish.

Special courses will be arranged so that specialists will be developed for duties other than those prescribed for reserve officers of the mobile arms, if sufficient students desire to take such courses.

It must be clearly kept in mind that these courses are arranged so that the standard required will be that for a platoon leader in an infantry company or of the equivalent unit in the other arms.

Such units cannot be considered apart from the larger ones, which are made up of a combination of smaller ones. Hence intelligent team work depends on the leaders of smaller tactical units understanding the working of the larger units of their own arm or in combination with the other arms.

The student upon graduation should know what is required of a platoon from the point of view of the company commander, and understand clearly the interior economy of a company. He must know what is demanded of the soldier as an individual, and also in combination as part of a larger organization. The last knowledge should include some idea of the tactical handling of a battalion, of which his company is a smaller unit.

COURSE OF TRAINING FOR JUNIOR DIVISION.

1.—INFANTRY DRILL REGULATIONS (PRACTICAL AND THEORETICAL). Includes definitions, general principles, combat and ceremonies. School of the soldier, school of the squad, school of the company, school of the battalion, in extended order, combat, and intrenchments.

2.—MANUAL OF INTERIOR GUARD DUTY (PRACTICAL AND THEORETICAL). Duties as sentries; general principles.

3.—PHYSICAL DRILLS. Calisthenics, bayonet exercises, and combat fencing.

4.—MILITARY HYGIENE. To include principles of personal hygiene, camp sanitation, first aid to the injured, etc.

5.—MILITARY POLICY. A few lectures, when in last year at institution, on the military policy of the United States and the military obligation of citizenship.

6.—SMALL-ARMS FIRING REGULATIONS. Preliminary instruction in rifle firing; sighting position and pointing and aiming drill; indoor and range practice; due attention devoted to fire direction and control, and, if possible, some collective fire.

7.—ADMINISTRATION AND ORGANIZATION. A few lectures on company administration and Tables of Organization.

8.—MAP READING. Instruction in reading a contoured map (in connection with 9).

9.—FIELD-SERVICE REGULATIONS: Patrolling; advance and read guards; outposts, by means of the sand table and small map maneuvers; messages and orderly work.

10.—MARCHES AND CAMPS. Simple camping expedients.

11.—SIGNALING. Semaphore and flag.

Owing to the wide range of the ages of students, the majority being too young to follow intelligently a graded course such as is prescribed for the senior division, only the subjects in which proficiency must be attained are laid down. It is impossible to set any fixed number of years for the accomplishment of this program, but the schedule of instruction is arranged so that the cadet upon graduation will be proficient in all of the above subjects.

Should the cadet enter a collegiate institution in which is organized a senior division of the Reserve Officers' Training Corps he will enter the advanced course, Senior Division, if he has satisfactorily completed the course in the Junior Division.

Technical Courses.

TRADE COURSES.

These courses are maintained for the purpose of instructing young men in the practice and fundamental principles of manufacturing and building trades. The once prevalent apprentice system whereby boys were bound out to an employer for a term of years, has almost disappeared. In what remains of the apprenticeship systems, the tendency now is, with few exceptions, to train a boy to be a specialist upon one class of work. The first-class, all-round, skilled workman of our country is becoming very rare. The invention and use of automatic machinery which boys are now taught to operate, and the wage which is paid to these boys as operators, are often more than those paid to beginning apprentices; hence most young men prefer to become mere operators of one or a few machines instead of being taught a trade which will give them the ability to make the very machines which they control. Employers also are no longer willing to assume the responsibility of teaching trades to boys. They realize the difficulty of securing high-class skilled labor as the present-day shops are organized. The value of any workman to his employer depends upon his experience and his ability and willingness to apply that experience. Experience is valuable according to its composition. It should be composed of both practice and theory. By practice a workman attains skill and speed; by a study of theory he learns why each step is taken. The need for thorough and systematic instruction in the theory and practice of the trades being generally conceded, employers and employees alike are coming to recognize that a properly conducted trade school can and does offer a better preparation for industrial efficiency than can be obtained by working at a trade commercially. It has been shown that a boy can, by close application to work under competent instructors, learn more and learn in a better way in one-half the time required in a commercial shop.

It is not the claim of this school to turn out journeymen mechanics, but it does claim to instruct its students thoroughly and systematically in the shortest time possible in the fundamental principles and in the practice of the trade being learned, so that a student, upon graduation, possesses ability and sufficient confidence in himself as will be of immediate practical value to his employer, and he receives a fair and just remuneration at once. Students completing their course should be at least on a par with the apprentice who has served four years under commercial shop conditions.

INSTRUCTORS AND INSTRUCTION.

In every case the instructors are men of practical experience and skill, fully competent to teach the best modern methods and theory.

The scheme of instruction provides for extensive practice with the tools of the trades offered, for such instruction in drawing, mathematics, applied science, and trade theory as may be necessary to enable the students to read blue prints, make calculations, and understand in a general way the natural laws governing their work.

All regular students in the day school are required to attend classes in the supplementary subjects, and those in the evening classes are advised to if the need seems to justify it.

QUALIFICATIONS FOR ADMISSION.

The regular day school is open to men and to boys over fourteen years of age. Persons over sixteen years of age who are regularly employed during the day are permitted to enroll in the evening classes. The term "evening school work" is considered to mean school work given to persons at hours other than those of actual employment. The term is descriptive of the kind of work rather than of the particular time of day when the class is in session. Persons working in the night shifts can be taught in classes held in the morning or afternoon and be regarded as evening instruction.

LENGTH OF COURSE.

The work as planned covers a period of two years. The instruction is almost wholly individual, and a student's progress depends almost entirely upon his previous education and experience, his aptitude for the trade he has chosen, and his diligence. The school aims primarily at thoroughness, and students are required to follow the courses as outlined. The only exception to this rule will be made in the case of mature students who have already made a beginning at their trades before entering the school and who can remain for only a part of the year.

ATTENDANCE.

It is taken for granted that every student will attend regularly and work diligently, for only by being present and working diligently can one expect to accomplish the work laid out in any given course.

Any student who because of circumstances unavoidable is obliged to withdraw before a course is completed will receive credit for work satisfactorily done.

CERTIFICATES OF GRADUATION.

Each student, when he has completed the prescribed work in his course, will be given a certificate of graduation. Those who are compelled to leave the school before completing the prescribed course will, upon request, receive a statement of the work completed while in attendance.

THE TRADES OFFERED.

MACHINIST AND TOOL MAKING.
PATTERN MAKING.
AUTOMOBILE WORK.
CARPENTRY.

Machine Shop.

The instructions in this course of machine-shop practice provide for the thorough training of the student who wishes to become a competent, all-round machinist.

This course consists of shop work and instructions in a practical way. Students work from drawings and blue prints.

FIRST YEAR.

First Term. Drill-press work. Simple forging. Use of all common tools and their construction. Laying out, drilling, chipping, filing, tapping and threading with taps and dies. The proper use of all measuring instruments.

Second Term. Tool dressing and tempering, shaper, planer, lathe and milling-machine work.

Third Term. Elementary tool grinding and a continuation of Nos. 1 and 2 of various kinds of machine work. Leveling and aligning of different kinds of machine equipments.

SECOND YEAR.

First Term. Work on drill press, shaper and planer. Advanced lathe work, including centering up, chucking, faceplate work, turning and boring straight and taper. Size and form turning, milling machine work, end, slab and gang milling.

Second Term. Vertical and horizontal shaping and planing work. Use of grinding machine on external and internal work, straight and angular. Floor work, compound and differential indexing, spiral cutting, etc.

Third Term. Review of all machine and bench work. Tool making and milling-machine work.

Instruction throughout the course in forge work, hardening and tempering. Care of belts, machine-shop material, emery wheels, threads and methods. Grinding and classification of steel. Design and use of gigs, punches and dies.

APPLIED MATHEMATICS.

Course 1.—MATHEMATICS FOR MACHINISTS. Review of fundamental operations of arithmetic, common and decimal fractions, powers and roots, percentage, measures and weights, pulleys and belting, tooth gearing, elementary mechanics. The use of the simple equation and algebraic formulæ; fundamental concepts of geometry; centers of gravity; triangle and parallelogram of forces; stresses and strains; angle measurements; trigonometry of the right triangle and its applications to shapes of threads, taper turning, and work on the milling machine. A study of machine motions.

Machine Drawing.

CHAS. R. WASSER, Instructor.

FIRST YEAR.

First Term. Use and care of drawing instruments. Free-hand lettering and use of standard letters. Exercise work in use of drawing instruments, such as triangles, T-square, etc. Simple projections.

Second Term. Projections and revolution of solids. Free-hand sketching. Use of cross-section paper. Simple drawing of machine parts. Study of materials as related to cross-hatching.

Third Term. Geometrical problems in relation to trades, their application to shopman and draftsman. Threads, bolts, nuts, and hand-wheel details, etc.

SECOND YEAR.

First Term. Advanced conventions. Tracing and blue-printing. Measuring, sketching and carrying to completion machine parts, such as bearings, pulleys, simple gears, hand wheels, vises and gas-engine parts.

Second Term. Drawing related to direct shop work, such as making complete drawing with all details. Woodworking machines. Drill-press or speed lathe.

Third Term. Gearing—involute and cycloidal. Cams and motions. Making assembly drawings from details. Elementary design work. Use of handbooks, etc.

Pattern Making.

This course is designed for those who may wish to begin at the beginning, and for those who already know something about the trade and who wish to take up advanced types of work. The instruction throughout emphasizes the relation between pattern shop and foundry. Students work from drawings and blue prints throughout.

FIRST YEAR.

First Term. Care and use of bench tools, such as saws, planes, chisels, squares, boring tools, clamping devices, fasteners, etc. Molding of simple patterns. Demonstrations showing results of back draft, tight dowel pins, and tight dovetailed loose pieces. Core making.

Second Term. Materials. Kinds and special qualities of woods used for successful patterns. Metals and their characteristics. Simple patterns. Wood turning; use of lathe, spindle turning, faceplate and chucking processes.

Third Term. Laying out patterns. Segment work. Hand wheels, and general pattern work combining lathe and bench work. Lectures on core work and general foundry practice.

SECOND YEAR.

First Term. Built-up patterns, including choice and preparation of stock. Pipe and cylinder body, and pulley patterns.

Second Term. Spur, bevel, and worm gearing.

Third Term. Construction of patterns for complete machine.

MATHEMATICS. Special instruction in calculation of tapers, screws, pitch of bevel, worm, and spiral gears; laying out involute and epicycloidal teeth; screw propellers; shop algebra and trigonometry applicable to laying out work and setting machinery.

APPLIED MATHEMATICS.

Course 1.—MATHEMATICS FOR PATTERN MAKERS. Review of fundamental operations of arithmetic, common and decimal fractions, powers and roots, percentage, measures and weights, pulleys and belting, tooth gearing, elementary mechanics. The use of the simple equation and algebraic formulæ, fundamental concept of geometry, centers of gravity, triangle and parallelogram of forces, stresses and strains, angle measurements, trigonometry of the right triangle and its applications to shapes of threads, taper turning, and work on the milling machine. A study of machine motions.

Automobile Work.

The courses in automobile work have been arranged to give the student a thorough grounding in the principles of the auto gas engines. A combination of theory and practice, that each may supplement and aid the other, is the plan. This course will enable the student to operate the automobile economically; to adjust carburetors, grind valves, and make general repairs. It will teach him the function of differentials, timing, ignition, tension magnetos, batteries and different wiring systems for lighting and self-starters.

The instruction is given by means of lectures, blackboard sketches, charts, etc., supplemented by constant reference to the parts of the auto which are before the student, after which he tears down machines, makes repairs, and then assembles, under the close supervision and inspection of instructors who are experts in their line. No machine is permitted to leave our shops before it has passed the inspection of the director in charge of our automobile department.

Our courses are so arranged that we can take care of two groups of students—those who may wish only a short and more or less cursory study of the automobile in order to be able to operate their own cars, economically, and those who wish a very comprehensive knowledge—who wish to make this work their vocation. Classes are arranged for each group in both day and evening school.

Course 1.—ELEMENTARY AUTO MECHANICS. A course replete with assembly and dissassembly of automobile parts, the purpose of which is to familiarize the student with the various working parts—names, functions, and their relations; some knowledge of electrical terms, principles of magnetism and induction as applied to the automobile. The course consists of lectures, demonstrations, and shop work.

Course 2.—FORGING. A course especially for automobile students, involving the simple elements of forging and the making of such tools as is often convenient and economical for the garage worker to be able to do; also for the repairs for cars being overhauled in the shop.

Course 3.—AUTOMOBILE DRAWING. A course planned especially for automobile students, giving drill in free-hand sketching and practice in reading blue prints, charts and sketches. The automobile is the chief source from which all practice is derived.

Course 4.—ELEMENTARY MACHINE SHOP. A course designed to familiarize the student with the elementary principles of machine-shop practice, which includes chipping, filing to fit, machine drilling, tapping and threading with hand dies, and straight cylindrical and taper turning, shouldering, and chuck work; the cutting of single V and U. S. standard threads. Planer and shaper work in straight angle and oval cutting, key seating and slotting.

Course 5.—ADVANCED MACHINE SHOP. A continuation of course 4, designed for the student's use in machine construction and general repair works. The use of the universal milling and grinding machines; the making of spur, spiral, bevel and worm gears, and plain and cylindrical grinding. Prerequisite, course 4.

Course 6.—BRAZING AND OXYACETYLINE WELDING. A course which gives practice in simple soldering and brazing, repairing of radiators, and the use of oxyacetyline torch for cutting and welding of automobile castings.

Course 7.—ADVANCED AUTO MECHANICS. A course in which a more detailed study is made of the automobile, such as frames, springs, axles and wheels, transmissions, clutches, differentials, motors, etc., trouble hunting and repair work, valve grinding, carbon burning, and testing of motors. This is a very comprehensive course and should be preceded by course 1.

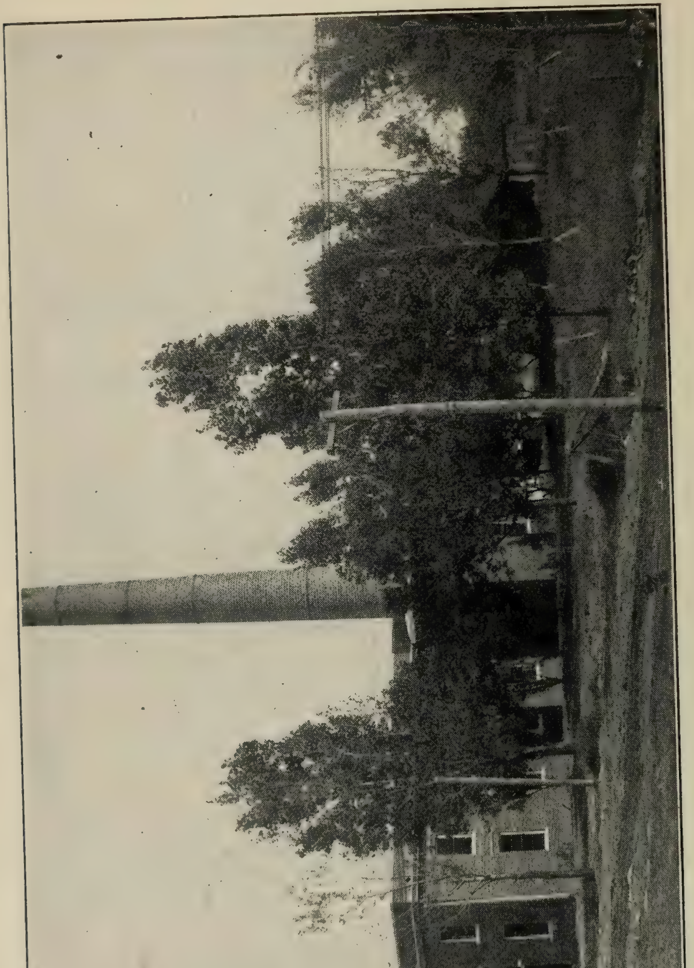
Carpentry and Wood Working.

The work offered in this trade consists of instruction in carpentry, joinery, cabinetmaking, stair building, and mill work. Students work from drawings and blue prints throughout, and the aim is to give a thorough foundation in all the fundamental processes of wood working. Early in the course opportunity is given the student to specialize in those branches of the trade that are of most value to him.

SHOP WORK.

FIRST YEAR.

First Term. Includes a study of tools—as uses, names of parts, adjustments, their care, and how to sharpen; the making of a few important joints, as lap mortise and tenon, gaining and dovetailing, and their application in making useful projects.



HEATING PLANT.

Second Term. A study of materials and fastenings—nails, screws, bolts, stirrups, etc. Practical use of joinery exercises in framing sills, plates, girders and ties, and fitting braces. Work on the various woodworking machines. Tool grinding. Setting up machines.

Third Term. Making window and door frames, porch and cornice work; exterior decoration; making and setting forms for reinforced concrete construction.

SECOND YEAR.

First Term. Balloon framing, timber framing, rafter framing, truss framing, laying joist, framing headers, etc. Setting of partitions, etc.

Second Term. Interior finish, such as jamb casing, baseboarding, mode of laying out ordinary straight stairs. Laying out winders. Kerfing stringers. Laminating stringers, risers and other bent work. Method of laying out and working hand railing for platform, quarter turn and winding stairways. Fitting and hanging doors and windows. Putting on hardware.

Third Term. Erecting buildings and full-sized sections of buildings in the school shop.

Lectures. During the entire course occasional lectures are given on such subjects as the following: Care of edged tools. The various woods used in building. Glue, nails, screws, bolts, pins, straps, and other fastenings. Setting up the various woodworking machines, their use and care. The steel square. Various building ordinances.

The mathematics emphasizes measurements of lumber, and cubic contents and geometrical problems involved in roof framing, stair building, and the use of the steel square. Estimates.

Course 2.—MATHEMATICS FOR CARPENTERS. Review of fundamental operations of arithmetic, common and decimal fractions, powers and roots, percentage, measures and weights; forces in structures; fundamental concepts of geometry; angle measurements; trigonometry of the right triangle as applied to framed structures; estimating costs; and uses of the steel square.

The drafting accompanying the carpentry course covers: Use of drafting instruments, lettering and sketching, orthographic projection. Details of simple cabinet work, window and door frames, sash and interior finish. Working drawings, consisting of scale plans, elevations and sections of houses. Tracing and blue-printing.

Carpentry Drawing.

FIRST YEAR.

First Term. Use of drawing materials, sketches of simple projections, free-hand lettering—use of architectural lettering, sketches of house plans. Framing details—sills, joists, studs, corner posts, rafter ends, etc. Window and door detail.

Second Term. Sketches of plan for small cottage. Detail framing plan for cottage. Plan of cottage to ¼″ scale. Framing plans for elevations. Tracing and blue-printing. Materials and quantities.

Third Term. Sketches for plan of two-story house. Stair layout and stair detail. Framing plans and elevations. Elevations of exterior. Cost.

SECOND YEAR.

First Term. Original plan for residence. Study of arrangement of rooms. Locations of fixtures in kitchen and bathroom. Heating and lighting. Sanitation.

Second Term. Elevations for original design for residence. Tracing and blue-printing of architectural plan. Estimate of materials and cost.

Third Term. Detail drawings of interior finish and building fixtures. Building laws and contracts.

Vocational Courses.

These courses are planned to give the student, in the shortest time possible, the knowledge and manual preparation which are essential to the skilled worker. The student leaves out all preliminary studies, once thought so essential, and goes at once to the study of the work he has chosen to do. He masters the "why" as he learns the manipulation. He is allowed to advance as rapidly as his ability permits. The working conditions are made as nearly like those in real working experience as is possible to make them. Emphasis is placed upon acquiring that skill and ability which will enable him to do quickly and thoroughly the service which he is to be employed to do.

These courses are designed for those who are already workers in the vocation and who wish to become more proficient, and thus do more and a better class of work; also for those who wish to prepare themselves to enter their chosen field.

A certificate is given at the completion of any course, showing the work accomplished, and at the completion of all the divisions of the course a diploma, stating such completion, is given.

Vocational courses include courses for miners, steam engineers, electrical workers, telegraphers, stenographers, bookkeepers, and home makers.

A Course for Miners.

This is a practical course for all who are interested in mining. The information contained is essential to operator, manager, superintendent, foreman, fire boss or digger. It is essential that the men who are engaged in this extremely important industry know thoroughly the very best methods of operation and the safest and most economic way to get the coal to the surface. A complete understanding and practice of the science involved in this work will greatly lessen the accidents which occur in our Kansas mines, give the men underground better working conditions, purer air to breathe and less liability to accident.

Emphasis is placed upon the practical side of the work—"Use the head as well as the muscle." The course includes the following: Courses in mine gases and ventilation, timbering, explosives and haulage, together with the mathematics and sciences involved in the work of the miners and those directly engaged in this industry.

Course 1.—TECHNICAL INFORMATION. This course includes the science and mechanical principles that are related to mine occupation. The number of lessons required to complete the course depends on the previous training of the student. One who is familiar with the scientific and mechanical principles involved may complete this course in four lessons. Those who are not fairly well grounded in the above principles will need to give eight or ten lessons to this subject.

Course 2.—GASES. This course includes the careful study of the different gases found in mines. The composition and properties of the gases are thoroughly studied. The tests and means employed for identifying the different gases found in mines, together with the effect those have on men working in the mines, is included in this course. Eight lessons will be needed to complete the course unless one is somewhat familiar with these gases before beginning the course.

Course 3.—SAFETY LAMPS. This course includes careful study of the construction of different kinds of lamps. The scientific principles involved in the construction of the safety lamp, together with its proper use, are carefully studied. At least four lessons will be required to complete this course unless one is quite familiar with safety lamps.

Course 4.—MINE VENTILATION. This course includes the study of mine ventilation and the various systems in common use in coal mines. Twelve lessons will be required to complete the course unless one has already made a careful study of this important subject. No subject is of greater importance to the miners than proper ventilation.

Course 5.—TESTING APPARATUS USED IN MINES. This course includes the study of the uses of such pieces of apparatus as the anemometer, barometer, thermometer and water gauge as related to coal mines. One can complete this course in three lessons. It is quite important that men know how to use properly the apparatus upon which the proper ventilation of the mines largely depends, and to be able to make such calculations from the readings of the instruments as will enable them to know the character of the air in the mines.

Course 6.—MINE LIGHTING. This course includes a study of the different systems used in the lighting of the mines. The advantages and disadvantages of the different systems are studied. The cost of operation is also considered.

Course 7.—GEOLOGY. A course dealing with the strata above and below the coal; fissures, faults, horsebacks and slopes, the composition and physical properties of the strata overlying the coal. This course is given to prepare for the course in timbering.

Course 8.—TIMBERING MINES. Six lessons will be needed to complete this course. Many of the accidents that occur in our mines might be avoided by proper timbering. The different ways of testing the roof and the proper placing of props are thoroughly studied in this course.

Course 9.—SHOT FIRING. Three lessons will be needed to complete this course. The different kinds of explosives that are used in coal mining and the different systems of shot firing are studied. The dangers of explosives and proper handling of explosives receive attention.

Course 10.—MINE MACHINERY. Six lessons will be needed to complete this course, which includes a study of ventilating fans, water pumps, trams, hoisters and electrical motor machinery. This course will also include the study of the principles of "safety first" as applied to the use of all machinery.

Course 11.—MINE-RESCUE WORK. The course given by the United States government in mine-rescue service, or by the state mine-rescue station, completes this course.

Course 12.—STATE MINING LAW. A careful study of the state coal-mining laws, together with the duties of various mine officials, make up this course, which will require six lessons to complete it.

Course 13.—HAULAGE. This course includes the different systems of haulage that are in use in coal mines, the laying out of tracks and switches, the sizes and kinds of mine cars, and other practical points connected with the installation and upkeep of mine roads and haulage equipments. Four lessons.

Course 14.—MAPPING. This course includes the reading of a blue print so as to be able to locate definite points in a mine from a map of the mine. Two lessons.

A course in related drawing, related science, related mathematics and various shop courses will be found helpful to those who seek complete information in the subject of coal mining.

FUEL CONSERVATION.

This course is for firemen and those interested in the economic and smokeless combustion of coal. The course is designed to give such information to those who burn coal as to make them use it most economically. A study of the ash, smoke and combustible gases as very commonly seen in all our heating and industrial plants will show that there is a considerable percent of waste of coal. A thorough knowledge of the combustion of the coal used and the principles of combustion employed will enable those who use coal to get the largest possible number of heat units therefrom. Lectures and suggested readings, together with demonstrations to illustrate the principles involved, are given. It is expected that those who take the course will find its application in the work they have to perform, and the hope is that by use of the principles of chemistry employed the man will be able, through the use of his head as well as his hands, to obtain the highest possible results.

Steam Engineering.

This course is designed for men who have had experience as oilers, firemen and assistant engineers, who want to qualify themselves to pass examinations for an engineer's certificate to run portable and hoisting engines or stationary plants. The practical engineer will also find much that is valuable to him in the lectures and discussions on the design and operation of engines and boilers. A fair knowledge of practical mathematics is necessary to successfully complete this course, and men who are not sufficiently trained in this important subject should study it along with the other subjects.

A certificate is given at the completion of any one subject, these being statements that the student was in attendance while the subject was being given, and that his work was satisfactory.

A diploma in steam engineering is given at the completion of the entire group of subjects.

Course 1.—ELEMENTARY STEAM POWER PLANTS. This course involves the inspection, testing, care and operation of steam-plant equipment; the study of heat, its nature and effect; fuel; draft; types of boilers and the advantages of each type; boiler power of boilers; boiler accessories; types of steam engines; valve setting of the simple slide valve; horsepower of engines; indicator cards. Laboratory work and inspection trips are included in this course.

Course 2.—ADVANCED STEAM POWER PLANTS. A more advanced course in steam engines and boilers, in which principles of design are more completely considered; valve setting of Corliss and other types of valves; steam turbines; elements of thermodynamics. Laboratory work and inspection trips.

Course 3.—CHEMISTRY OF THE BOILER ROOM. This course deals with the chemical processes involved in proper combustion of fuels; impurities in water; use of boiler compounds and water softeners. A study of the ash, smoke and combustible gases, as is very commonly seen in all our heating and industrial plants, will show that there is a considerable percent of waste of coal. This course is designed to instruct the student in methods that will eliminate the waste of fuel as far as it is possible to do so.

Electricians' Course.

The work offered in this vocation consists of a number of courses. The completion of any one leads to a certificate showing that the work has been completed for that course. The completion of all the courses outlined below leads to a certificate showing the completion of the entire course, and is designed to give one a general working knowledge of electricity.

The purpose of this course is to train young or mature men in the different lines of electrical work, so that they may fill the different positions in our various industries requiring a knowledge of electrical work. There are many men who have not had opportunity for the educational training necessary for an electrical engineer, but who desire to be able to do well some line of electrical work. This course is planned for that type of men.

Course 1.—D. C. AND A. C. MACHINERY. The construction, operation and repair of dynamos and motors are carefully studied in this course. The text and lecture demonstration includes the fundamental principles involved in different types of electrical machinery. Opportunity will be offered for the student to examine and operate different types of electrical machines, make important electrical measurements, and solve problems connected therewith.

Course 2.—ARMATURE WINDING. The principles involved in the structure of an armature is studied from both text and lecture demonstrations. The fundamental principles employed in winding of both alternating-current and direct-current generators and motors are studied in this course from text, lecture demonstration, and practice work on different types of machinery. The lap and wave windings and the study of commutator construction will be stressed. The windings and connections for transformers are also studied. The study of soldering and installation, together with the size of wire used, will be made a part of this course.

Course 3.—ELECTRIC INSTALLATION. The purpose of this course is the careful study of installation of dynamos and switchboards, together with the connection of the generators with the source of power, and the switchboard with its connection with the transmission wires. This is a very important course, dealing not only with the installation of the larger generators, but also the location and operation of motors of different sizes connected therewith.

Course 4.—POWER TRANSMISSION. As the name indicates, this course deals with the transmission of electricity, from the source to the place where it is used to do work. It includes the study of the transformer, its location and connections; also, house-wiring for lights, estimating costs, and other problems connected with illumination. The designing and construction of electric signs is also studied.

Course 5.—STORAGE BATTERIES. The construction and operation of storage batteries is carefully studied. The charging of storage batteries receives careful attention. The problems of repair are also considered. Storage batteries are being used more and more in electrical work, and the proper use and repair of them is of great importance to electrical workers in the fields where batteries are used.

Course 6.—ELECTRICAL SIGNS. A study of electrical signs and the actual construction of a "sign" in the laboratory.

Course 7.—ELECTRIC WIRING. A practical course in the wiring of electrical lighting systems, appliances, and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits.

Course 8.—ELECTRIC WIRING II (ILLUMINATION). A practical course in the designing of illumination distribution for all purposes—home, school, business house, and street lighting. It includes a study of the various types of light shades and reflectors, and their adaptability for various classes of service.

Course 9.—GAS ENGINE. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics or in automobiles. Laboratory and lectures.

Course 10.—AUTOMOBILE ELECTRICITY. A companion course to course 9. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts.

Telegraphy.

This course is intended for those desiring to become telegraph operators and others interested in different phases of this subject.

RADIO. A practical course in sending and receiving messages by means of the ordinary telegraph key and buzzer. Instruction is given in the international code, and is intended to help the student for service in the signal corps of the United States army, or in any commercial field where wireless telegraphy is needed. The student is advised to take typewriting in connection with this course, so that the messages may be received and typed at the same time. Opportunity is given the student to practice sending and receiving messages.

MORSE TELEGRAPHY. A course is also given in American Morse code for both young men and young women wishing to qualify themselves for positions in railroad and commercial service. A student who will apply himself can in a short time learn to send and receive telegraphic messages. The student is advised to study typewriting in connection with this course, and arrangement is made for so doing, so that one may learn to receive and type a telegraphic message at the same time. The student is urged to advance as rapidly as possible, which greatly depends on his application and ability to grasp the subject.

Stenography and Bookkeeping.

Every person, sooner or later in life, is confronted with these questions: What can I do? How can I earn a living and make the most of myself? How can I make an income sufficient to provide a few of the luxuries, as well as the necessities of life, and still have something left for old age?

One of the objects of supreme importance in every life is how to make a living. To do this in this day of competition one must be able to do some one thing, and to do that one thing extraordinarily well. The mind and energy of almost every one you meet is of necessity centered on these questions, and how to accomplish these few things. When a boy or girl finishes high school, grammar school or college these questions he meets face to face, for it then becomes necessary for him to strike out—to do something—to make a living. Wise is the boy or girl who will acquire that special kind of training that will enable him to gain his start in congenial and remunerative employment, that will enable him to merit promotion and attain ultimate success, for without a proper start the arriving at a satisfactory end and the achievement of success are impossible. With these thoughts in mind we have planned two short courses of intensive training—the stenographic and bookkeeping courses.

HOW LONG DOES IT TAKE? We can understand why parents and students wish to know about how long it is going to take to complete a course. We will say, however, that the question is a pretty hard one to answer, inasmuch as so much depends on the student himself. His previous education, his industry, and the number of hours daily and at night he devotes to study must be considered. In our school every student has a certain amount of work to do and must do it regardless of the time it takes. By our individual method of instruction, no one is held back nor pushed forward and each stands on his own foundation. This is the advantage over the class method. But the work is planned so the student of average ability can complete the work in eight or nine months. Some may do it in less time.

MUST THE COURSE BE PURSUED AS PLANNED? No. One may take only such subjects as he desires. However, only the essentials are put in the course, and we recommend they be taken as planned.

POSITIONS. After completing these courses our students are capable of taking up office work at good salaries from the beginning. We do not guarantee positions for our students, but assist them. Our students have been doing this, and what others have done you can do. No well-qualified person need long look for a position. The position will seek him.

TUITION. The tuition for this work is a very small fee: $3 for incidentals, $2.50 for activity ticket, and 50 cents hospital fee per term of 20 weeks. A small rental for use of typewriter unless the student furnishes his own.

STENOGRAPHIC COURSE.

Shorthand.	Typewriting.	Business English.
Letter Writing.	Penmanship.	Spelling.

BOOKKEEPING COURSE.

Bookkeeping.	Business Law.	Rapid Calculation.
Penmanship.	Business Arithmetic.	Salesmanship.

BOOKKEEPING. General law of debit and credit. Use of journal, cash book, purchase book, sales book, and making of all business statements. Handling of notes, drafts and checks. Shipments and consignments. Some corporation work.

BUSINESS ARITHMETIC. Solving actual business problems; working time sheets; practical measurements; study of short methods.

PENMANSHIP. Developing of a plain, legible, rapid, business hand.

APPLIED BUSINESS ENGLISH. Careful study of business phrases. Rules for punctuation, and drills in their application.

LETTER WRITING. Study of letter forms; writing all classes of business letters, with enclosures; learn to do by doing; careful study of postal regulations and different classes of mail matter.

TYPEWRITING. Writing of charts; care and repair of machines; drills for speed; working of speed to forty words per minute.

SPELLING AND BUSINESS FORMS. Study of roots, prefixes and suffixes; spelling drills; study of checks, notes, drafts, deeds, mortgages, and writing of same.

Home Economics.

The evening courses in home economics are intended primarily for three classes of women.

1. Those who either expect soon to have charge of their own homes or who are interested in preparing themselves for home-making responsibilities.

2. Women who are already home makers or household assistants and who desire to extend their knowledge of home making that they may be more efficient in some particular phase of their vocation.

3. Those who see the personal advantage of knowing how to do their own sewing or be able to make their own hats, cook their own meals, budget their incomes, etc.

All applicants must be sixteen years of age or over.

Classes meet twice a week in the evening unless some other time seems more desirable.

Each course is divided into shorter units and the student may take the complete course or the unit she especially desires. A certificate is conferred upon those completing a course.

Course 1.—PREPARATION OF FOOD. This course is of a most practical nature and covers work in the preparation of the most common food materials. Instruction is given in proper food combinations, in meals, food values, economy and thrift.

Unit 1. Preparation of foods appropriate for serving at breakfast. Among the foods prepared are fruits, cereals, eggs, griddle cakes, waffles, muffins, baking-powder biscuits, eggs, creamed dishes, cocoa and coffee.

Unit 2. Preparation of foods appropriate for serving at luncheon or supper, as cream soup, meat, vegetables, rolls, salads, sandwiches, desserts.

Unit 3. Preparation of foods appropriate for serving at dinner, as soup, meats, poultry, fish, vegetables, bread, salads, desserts. A few miscellaneous lessons include making cakes, cookies, gingerbread, use of leftovers, and canning and preserving.

Course 2.—CLOTHING.

Unit 1. Repairing and renovation of clothing and household linens: (*a*) Remodeling of a worsted dress for child or adult, or remodeling a suit. This includes instruction in budget making, percent of income to be spent on clothing, need of conservation, selection of patterns, testing for wool and silk. (*b*) Remodeling petticoat. (*c*) Making camisole from a waist.

Unit 2. Making a tailored skirt of cotton material.

Unit 3. Making a gingham dress.

Unit 4. Making a lingerie waist.

Course 3.—MILLINERY. Making and trimming of hats, renovation of materials.

Course 4.—CHILDREN'S CLOTHING. Making of under and outer garments for children of different ages. Styles best suited to children will be used.

Course 5.—INFANT'S LAYETTE. Making of a complete layette for an infant, using styles best adapted to comfort and growth and using inexpensive materials.

Course 6.—SELECTION OF MATERIALS AND READY-TO-WEAR GARMENTS. Instruction in the wise buying of materials for garments and for house furnishings. Study of styles, lines, materials, and colors in ready-to-wear garments.

Course 7.—SERVING OF MEALS. Attention is given to menu making, and meals, both formal and informal, are prepared and served. Emphasis is put upon economy in the use of materials and also saving time and energy for the housewife.

Course 8.—FOOD VALUES. Practical instruction in the value of foods; how to plan balanced meals; wise choice of foods, and their use in the body.

Course 9.—HOME NURSING. Home care of the sick is studied and demonstrations given in bathing the patient, making the bed, and so forth. Lessons are given in preparation of food for the sick.

Course 10.—CARE OF CHILDREN. Lessons in the care and feeding of infants and young children.

Course 11.—LAUNDRY WORK. This course includes study of soaps, bluing and other materials used in laundry work; also laundry equipment. The laundering of various materials, including woool and silk; also removal of stains.

Course 12.—HOUSEWIFERY. Study of the care of the house and its furnishings, washing of windows, cleaning of metals of various kinds, silver, woodwork, care of the stove, refrigerator and plumbing.

Course 13.—HOUSEHOLD MANAGEMENT. Budget making, problems of domestic service, methods of keeping accounts, and other problems of the home maker.

Industrial Engineering Courses.

In addition to the trade courses previously described, the institution offers courses in civil, electrical, mechanical and mining engineering for those who are ambitious to fill positions above the grade of skilled mechanics in mines and manufacturing and industrial plants. A superintendent or manager must have a more thorough training in the theoretical side of the subject. This must be preceded by a more extensive course in mathematics and science than is necessary for trade instruction.

The completion of a full high-school course is recommended for entrance to these courses, but men who have the advantage of extensive practical experience along the line of the course that they wish to enter will generally find that their preparation is sufficient.

The courses are designed for two years' work for industrious and capable students. A diploma is granted to those who complete satisfactorily any of the two-year courses.

THE LIBRARY.

All students have access to the school library, in which will be found a collection of trade and technical periodicals and reference works of especial value to those engaged in industrial pursuits.

EQUIPMENT.

The institution possesses sufficient apparatus of a technical nature to offer up-to-date instruction in each of the courses named. This is constantly being added to in order that it may more completely meet the needs of the classes. The shops and drafting rooms are large and well equipped for such shop work as is required, and the laboratories contain much material specially purchased for practical instruction. The aim of the mathematics and science departments has always been to emphasize the practical side of their courses; accordingly their equipment has been selected for the value it may possess in teaching the applications of the theoretical principles discussed in the classrooms.

INDUSTRIAL CIVIL ENGINEERING COURSE.

Civil engineering has to do with planning, locating, and construction of public works such as bridges, railroads, hydraulic plants; with municipal improvements such as sewer systems, paving, drainage, parks, and waterworks; and with the measuring and mapping of lines both on the surface of the ground and beneath the surface. This latter type of work is known as mine surveying, and the course as outlined covers the essentials of this type of surveying. Civil engineering includes several different classes of work, and the purpose of the course offered at this institution is to get acquainted with the elements of the main types of work so that the student may make a wise selection of the field in which he wishes to specialize.

INDUSTRIAL ELECTRICAL ENGINEERING COURSE.

Electrical engineering, as is indicated by the name, has to do with the study of electricity and the different electrical machines and appliances that utilize this important force; in a word, the generation and utilization of this wonderful power. Practically every line of mechanical work employs electricity in some way. The purpose of this course is to thoroughly acquaint the student with the installation, care and repair of the different lines of electrical machinery and appliances. Never in the world's history has electricity played so large a part in the world's work as to-day, and this practical course is planned to train those who complete it to understand and to be able to fill positions in the various lines of electrical work. The practical side of the work is stressed in this course, and is intended to prepare those who wish to enter electrical industries.

INDUSTRIAL MECHANICAL ENGINEERING COURSE.

Mechanical Engineering embraces the design, construction and operation of machinery. The many new inventions make the mechanical engineer a factor of growing importance in the world's work. In order to become efficient in this vocation, a foundation of mathematics, science, and drafting must be obtained. In addition to these subjects, which enable the student to think correctly and express his ideas by means of drawings, a definite training along some special lines of machinery must be secured. Generally steam engineering is the more important type of mechanical engineering because of the universal use of steam machinery and refrigerating machinery. All of these subjects are included in the course as outlined, giving the student an appreciation of the relation of the various kinds of machinery whose operation is under the charge of mechanical engineers.

INDUSTRIAL MINING ENGINEERING COURSE.

This course is intended to prepare those who take it with a practical working knowledge of the different positions necessary for the operation of this important industry. Our mines furnish the materials which are absolutely essential to the operation of our manufacturing industries. Without coal our machines for manufacturing and transportation must lie idle; in fact, without coal and other mining products we would have no machinery. The mining industry is considered a very hazardous one, and the purpose of this short, practical course is to so acquaint those who are to have charge of the work, with the science involved, that many of the hazards or accidents which too often occur in and around our mines may be removed. The location of this institution, in the center of the great coal field of our state, gives an ideal opportunity for the student to study at first hand the operation of coal mines. The lead and zinc mines of our state are also located near the institution, and are connected by trolley with the city of Pittsburg. The student may, with little expense to himself, visit and study both the coal and metal mines of our state. The practical side of the work is stressed in this course.

Curricula in Engineering Courses.

INDUSTRIAL CIVIL ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Plane Trigonometry	2	Analytical Geometry	4
Elementary Surveying	2	Forging, Bench Metal and Elementary Machine Shop	3
Wood Turning, Pattern Making and Foundry	3	Machine Drawing	2
Machine Drawing	2	Mine Surveying	2
Chemistry I	5	Strength of Materials	2
Physical Education 1	1	Elementary Steam Power Plants	3
		Physical Education 2	1
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Mechanics and Heat	4	Railroad Surveying	2
Topographical Surveying	2	Contracts and Specifications	2
Mechanism	2	Hydraulics	3
Electric Wiring	2	Sanitation and Water Supply	2
Mine Gases and Ventilation	2	Electrical Machinery	4
Geology	3	Sewers, Roads and Pavements	2
		Technical Report	1
	15		16

INDUSTRIAL ELECTRICAL ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Plane Trigonometry	2	Analytical Geometry	4
Gas Engines	3	Electric Wiring	2
Wood Turning, Pattern Making and Foundry	3	Electrical Machinery	4
Machine Drawing	2	Forging, Bench Metal and Elementary Machine Shop	3
Chemistry I	5	Physical Education 2	1
Physical Education 1	1		16
	16		

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Mechanics and Heat	4	Elementary Surveying	2
Electrical Measurements	3	Gas Engine Electricity	2
Mechanism	2	Contracts and Specifications	2
Armature Winding	2	Elementary Steam Power Plants	3
D. C. Machinery Design	2	Illumination	2
Electrical Installations	2	A. C. Machinery	4
		Technical Report	1
	15		16

INDUSTRIAL MECHANICAL ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Plane Trigonometry	2	Analytical Geometry	4
Gas Engines	3	Strength of Materials	2
Wood Turning, Pattern Making and Foundry	3	Elementary Surveying	2
Machine Drawing	2	Forging, Bench Metal and Elementary Machine Shop	3
Chemistry I	5	Machine Drawing	2
Physical Education 1	1	Elementary Steam Power Plants	3
		Physical Education 2	1
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Mechanics and Heat	4	Refrigeration	2
Thermodynamics	2	Electrical Machinery	4
Advanced Machine Shop	3	Hydraulics	3
Machine Design	2	Gas Engine Electricity	2
Mechanism	2	Contracts and Specifications	2
Electric Wiring	2	Steam Turbines	2
		Technical Report	1
	15		16

INDUSTRIAL MINING ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Plane Trigonometry	2	Analytical Geometry	4
Gas Engines	3	Forging, Bench Metal and Elementary Machine Shop	3
Wood Turning, Pattern Making and Foundry	3	Machine Drawing	2
Machine Drawing	2	Qualitative Analysis	4
Chemistry I	5	Strength of Materials	2
Physical Education 1	1	Physical Education 2	1
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Applied Mechanics and Heat	4	Electrial Machinery	4
Electric Wiring	2	Elementary Steam Power Plants	3
Quantitative Analysis	2	Contracts and Specifications	2
Mine Gases and Ventilation	2	Mineralogy	2
Geology	3	Explosives	2
Elementary Surveying	2	Mine Surveying	2
		Technical Report	1
	15		16

Department of Mathematics and Applied Mechanics.

This department directs the work of the industrial civil engineering course and the industrial mechanical engineering course. It offers a large part of the subjects included in them, many of which are also contained in the other industrial engineering courses. The aim of this department is to make all its work as practical as possible, all of which is kept in close relation with the best methods in use by the leading men in the industries represented.

Pittsburg is located in the largest coal-mining area of Kansas, and is therefore not only the place where the offices of almost all the coal companies are located, but it is also the center of the mechanical and industrial plants which install and repair the machinery used in the production of coal. This gives the students of this institution an excellent opportunity to make tests of all types of machinery when in actual operation, and arrangements have been made with several companies for the testing of their plants in coöperation with the students of the engineering courses.

Inspection trips are made to a large number of industrial plants as part of the work of each course, and include trips to steam shovels, electric shovels, coal mines, zinc mines, cold-storage plants, railroad shops, the hydroelectric plant at Lowell, and the steam electric plant at Riverton. These last two plants are part of the Empire District Electric Company's system, which supplies electric power to almost all the cities of southeast Kansas and southwest Missouri.

Students of civil engineering find also an excellent opportunity to become familiar with their line of work in both surface and subsurface surveys. There are quite often opportunities for young men to help in these surveys under the direction of the many efficient civil engineers of this district, and get valuable experience while attending school. Since there is so much of all types of engineering work being carried on in the vicinity of Pittsburg, it is also quite easy to secure employment at the completion of the course, and the institution can be of great help to capable and industrious students in getting started in the work for which they are adequately prepared.

Course 4.—PLANE TRIGONOMETRY. The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two hours credit. Prerequisites, one unit of high-school algebra and one unit of geometry.

Course 5.—ANALYTICAL GEOMETRY. The straight line; circle; elements of parabola, ellipse, and hyperbola; polar coördinates; higher plane curves; elements of solid analytical geometry. Four hours credit. Prerequisite, Plane Trigonometry.

Course 12.—ELEMENTARY SURVEYING. A brief course in the use of surveyors' instruments; laying out of walks, drives, ditches, and buildings; calculation of cuts and fills; elements of land surveying. Prerequisite, plane trigonometry. Two hours credit.

Course 13.—MINE SURVEYING. Instruments and methods used for underground traverse and connection surveys; shaft plumbing and special problems. Field work includes the survey of tunnels under campus and actual mine surveys. Prerequisite, Elementary Surveying. Two hours credit.

Course 14.—TOPOGRAPHICAL SURVEYING. Practice in taking topography by transit and stadia, triangulation, measurement of base lines. A topographical survey of an area is made and the resulting contour map constructed from the data obtained. Prerequisite, elementary surveying. Two hours credit.

Course 15.—RAILROAD SURVEYING. A study of the methods used in laying out and constructing railways, with field practice sufficient to familiarize the student with these operations; calculation of waterways; laying out of bridges, turnouts, and easement curves. Prerequisite, Elementary Surveying. Two hours credit.

Course 16.—STRENGTH OF MATERIALS. A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shafting and reinforced concrete, resilience of materials. Two hours credit.

Course 17.—MECHANISM. A study of the motion of machine parts and of methods of transmission of motion by means of links, belts, gears, and cams. This work is related closely to the machine motions used in the steam engine and various shop machines. Two hours credit.

Course 18.—MACHINE DESIGN. Solution of problems in the design of general machine parts, including cylinders, plates, springs, riveted joints, bearings, shafts, gears, pulleys, and belts. Lectures, recitations, and drawing. Prerequisite, Strength of Materials. Two hours credit.

Course 19.—SANITATION AND WATER SUPPLY. A study of the problems of water supply for rural homes and cities, with special reference to the cities of Kansas; purification of water; types of water systems, sewer systems and sewage disposal. Lectures and inspection trips. Two hours credit.

Course 20.—ELEMENTARY STEAM POWER PLANTS. A brief study of the general problems of steam power generation; fuels, combustion and steam generation; a study of boiler and engine types; engine mechanisms and power plant auxiliaries; laboratory practice in testing of steam machinery. Three hours credit.

Course 21.—THERMODYNAMICS. The relation between heat and mechanical energy; theory of heat engines; the action of vapors under the influence of heat and pressure. Two hours credit.

Course 22.—STEAM TURBINES. A special study of the different types of steam turbines with the auxiliary apparatus used with them. Inspection trips to the power plants using these different types of turbines.

Course 23.—HYDRAULICS. The study of the laws governing the action of liquids in pipes and their flow through pipes and over weirs. The types of pumping and hydraulic power machinery with special reference to the uses of pumps in removing water from mines. Three hours credit.

Course 24.—REFRIGERATION. A study of the construction and operation of the principal types of refrigerating machinery as used in cold-storage plants and in the manufacture of artificial ice. Inspection trips to plants using these types of machinery. Two hours credit.

Course 25.—SEWERS, ROADS AND PAVEMENTS. An elementary course in the design and construction of sewers and storm drains. The collection and distribution of water supplies, with more detailed discussions of the apparatus used in purifying water and sewage. Two hours credit.

Department of Chemical and Physical Sciences.

This department directs the work of the industrial electrical engineering course and industrial mining engineering course. It offers the larger part of the work required in these courses, also much of the work required in the other engineering courses. The department also directs the vocational courses for electricians, miners and telegraphers, since the work required of these courses is so closely connected with like engineering courses. These courses are the outgrowth of the different practical courses given in chemistry, geology and physics, supplemented with like work given by other departments of the institution.

The location of the institution, at the center of the mining and other industrial activities of Kansas, offers many opportunities for those who complete these practical courses to become acquainted with the employers, and thus secure positions in the mines and electrical industries of our state. The students will be taken on inspection trips, which will enable them to study the different phases of the work which they will be required to do in actual practice. The practical side of the work is stressed, so that the student is enabled to connect the work which he is called upon to do in the classroom with its application in industrial work. The use of electricity is constantly increasing, on account of its cheapness and convenience, thus causing an increasing demand for electrical workers. Students are helped and urged to secure positions along the line of their work during vacations, so that they get experience in the profession they are to follow. The proper installation, care and repair of electrical machinery and electrical appliances, which are being so universally used in all our industrial activities, demand skilled men who know the "why" and "how" in this line of work. The idea in each course is to bring to the worker the best ideas and the most economical way that is known by which his task may be accomplished. Stress is placed upon acquiring the ability to do a job quickly, thoroughly, and in a scientific way.

CHEMISTRY.

Course 1.—CHEMISTRY. In this course the student becomes acquainted with the different materials and elements that are used in every industry. He studies the principles involved in the transformation of the different substances with which he works. Applications of the principles of this fundamental science in all phases of work are stressed. Due emphasis is placed upon the applications of these principles to the different lines of trade or profession in which the student is engaged. Subjects included in this course are the gases, as oxygen, nitrogen, carbon dioxide, together with a description of the common metals, how they rust, protection of same; in a word, the chemical processes involved in converting raw material into finished products. Other subjects, as the study of acids, oils, paints, salts, etc., will be considered in a practical way in this course. Laboratory fee for material used. Five hours credit.

Course 3.—QUALITATIVE ANALYSIS. This course consists largely of laboratory work. Emphasis is placed upon the analysis and properties of those substances that are used in the industrial arts, as oils, pigments, paints, varnishes, fuels, and alloys. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Laboratory fee for material used. Four hours credit.

Course 4.—QUANTITATIVE ANALYSIS. This is principally a laboratory course, including both gravimetric and volumetric analysis, supplemented by lectures and recitations. The calibration of glassware and the study of the relation of chemistry to other sciences, along with the various vocations of life, are included in this course. Prerequisite, Chemistry 3. Laboratory fee for material used. Two hours credit.

Course 17.—TESTING OF OILS. This course includes the usual chemical tests for the examination of the various fuel and lubricating oils used in our industries. The overpoint, end-point, and flash and fire point, together with viscosity and friction coefficients, are studied. Laboratory fee for material used. Two hours credit.

COURSES FOR MINERS AND THOSE INTERESTED IN MINING.

Course 18.—MINE GASES AND VENTILATION. A beginning course in the study of gases found in mines. The properties and tests for these gases will be thoroughly studied. These gases will be prepared in the classroom and various tests for them made. The safety lamp will be thoroughly studied, and its use in testing for the gases found in the mine. The origin and removal of the gases will receive attention. No effort will be spared in teaching the students in this course the practical side of this work. In ventilation the student will be taught how to get the necessary data and how to find the quality of air in a mine, how to keep the quality of the air supply in the mine in proper healthful condition, also how to make the necessary measurements and calculations for the proper ventilation of mines. Two hours credit.

Course 19.—EXPLOSIVES. This course deals with the explosives used in mining, their proper care and attention. The chemistry of explosives is studied in a practical way; also the causes that lead to explosions and how these accidents may be avoided is carefully considered. In all these courses opportunity will be given for questions and discussions in order to find the best way to do the work in hand, and also to avoid accidents. The different methods of mining will receive their share of attention. Two hours credit.

GEOLOGY.

Course 40.—MINERALOGY. This is a brief course in the study of our common rocks and minerals. Easy physical and chemical tests for identification, together with crystal structure, are studied. The relation of the different types of soil and water as found in our state to that of the geological formations is emphasized. Two hours credit.

Course 41.—GEOLOGY. This course includes the study of the natural materials that are used in various industrial activities, their identification, manufacture and use. Such subjects as the distribution and supply of fuel and road-building materials are studied in this course. Three hours credit.

APPLIED PHYSICS.

Course 23.—ELECTRIC WIRING. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Two hours credit.

Course 24.—ILLUMINATION. A continuation of course 23. A practical course in the designing of illumination distribution for all purposes—home, school, business house, and street lighting. It includes a study of the various types of light sources, shades, and reflectors and their adaptability for various classes of service. Prerequisite, course 23. Two hours credit.

Course 25.—GAS ENGINE I. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics or automobiles. Laboratory and lectures. Prerequisite, high-school physics. Three hours credit.

Course 26.—GAS ENGINE ELECTRICITY. A companion course to course 25. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts. Prerequisite, high-school physics. Two hours credit.

Course 27.—ARMATURE WINDING. A practical course in the testing and repairing of defective and burned-out electrical machinery. Prerequisite, course 33. Two hours credit.

Course 29.—ELECTRICAL INSTALLATION. The purpose of this course is the careful study of installation of dynamos and switchboards, together with the connection of the generators with the source of power, and the switchboard with its connection with the transmission wires. This is a very important course, dealing not only with the installation of the larger generators, but also the location and operation of motors of different sizes connected therewith. Two hours credit.

Course 31.—MECHANICS AND HEAT. This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in building, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, high-school physics. Four hours credit.

Course 33.—ELECTRICAL MACHINERY. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, high-school physics. Four hours credit.

Course 34.—ELECTRICAL MEASUREMENTS. Lectures and laboratory. Includes meter testing; the measurement of temperature coefficient of resistance; specific resistance of copper, iron, aluminum, etc.; the electrolysis measurement of copper; testing of iron for hysteresis and its measurement; the measuring capacity, inductance and earth's magnetic field; telephone line measurements; and wireless equipment measurement. Three hours credit.

Course 35.—DIRECT-CURRENT MACHINE DESIGN. Lectures and design. The theory of direct-current machine construction. Includes the theory of magnet design, both shunt and series and armature design. Two practical problems are given, one the design of a lifting electro magnet, and the other the design of a direct-current motor. Two hours credit.

Course 36.—ALTERNATING-CURRENT MACHINERY. Lectures, design and laboratory. Advanced alternating-current machinery and alternating-current machine design. Some of the higher problems of alternating-current machinery are taken up in this course, such as alternating-current transmission line calculations and inductive interference in alternating-current transmission lines, transfer men regulations, alternating-current generator, voltage regulators, etc.

A problem in the design of an alternating-current machine, either transformer, generator or motor, will be solved. Four hours credit.

ELECTRICAL LABORATORY EQUIPMENT.

2	0-5 A. C. Weston voltmeters.
1	0-300 A. C. Weston voltmeter.
1	0-75 A. C. Weston voltmeter.
1	0-30 A. C. Weston voltmeter.
1	0-100 A. C. Weston ammeter.
1	0-15 A. C. Weston ammeter.
1	0-5 A. C. Weston ammeter.
1	0-2 A. C. Weston ammeter.
1	0-2.5-25 D. C. Weston ammeter.
1	01.5-3-30 D. C. Weston ammeter.
1	0-3-30-300 D. C. Weston voltmeter.
1	100-0-100 D. C. Weston milivolmeter.
1	0-7 Hat Wire ammeter.
2	1 kw. wattmeters.
2	Sangamo induction watt-hour meters.
1	Wall galvanometer.
5	Table galvanometers.
1	Post office bridge.
1	Slide wire bridge.
1	Standard inductance.
3	Standard resistance boxes.
2	Standard condensers.
1	Magnetometer.
1	High insulation discharge key.
2	½ hp. G. E. repulsion induction motors, single phase.
1	⅛ hp. Century single-phase motor.
1	1 hp. G. E. 3-phase induction motor.
1	Diehl ¾ hp. D. C. dynamo.
2	D. C. ignition megnetos.
2	Bell transformers.
3	Moloney transformers, 1 kw., 220-110/55.
2	Current transformers.
5	80 amp.-hr. Edison storage batteries.
2	6 volt lead storage batteries.
1	2 volt lead storage battery.
1	Starting rheostat for D. C. motor.

In addition to these, the laboratory is equipped with several machines for practice work in armature winding, including a dummy armature and a transformer.

Power available in the laboratory is 220-volt D. C. and three-phase 220 or 110 volt A. C. for use in electrical work; induction motors of various types; a D. C. generator; 7 kw. and D. C. lathe motors.

CLASS IN ARMATURE WINDING.

Normal High School.

ADMISSION.

The Normal High School is maintained and intended primarily for persons who have not had, at high-school age, opportunities to do high-school work, and who have had teaching experience or who intend to become teachers. Persons who have high-school advantages in their home towns are not encouraged to enter.

Students may be admitted to the Secondary School of the State Manual Training Normal in any one of the following ways:

(1) Students who hold county diplomas, or who present other credentials indicating the completion of eighth-grade work with no evidence of additional study or maturity, will be admitted, without examination, to the *first year* Normal High School Course.

(2) Students who hold third-grade teachers' certificates will be admitted, without examination, to the *second year* of the Normal High School Course.

(3) Students of maturity holding certificates of second grade will be admitted, without examination, to the *third year* Normal High School Course.

(4) Students of maturity holding first-grade certificates will be admitted, without examination, to the *fourth year* Normal High School Course.

(5) Students not meeting any of the above requirements may be admitted, by examination, to such classes as their preparation warrants.

NOTE.—Students admitted under (2) or (3) will be required to complete work in which they are deficient.

GRADUATION.

For graduation from the Secondary School a student must have completed sixteen units of work. A unit is a year's work in one subject, reciting five times per week.

CONTEST.

The students in this department hold regular contests in debate, declamation, and essay. Gold medals are offered as prizes to the winners in these contests. These contests offer splendid opportunity to develop careful thinking and accurate and elegant expression.

RUSSONIAN SOCIETY.

This society is one of the liveliest literary organizations in the institution. It is maintained wholly by and in the interest of the secondary students. It is not only an excellent place for literary training, but it looks well to the social life of its members.

RECEPTIONS.

During the year several social functions are held under the direction of special leaders, which are not only a source of great pleasure and delight, but the students learn the best of social etiquette. The object is to fully prepare the student to appear at ease in any society, and to qualify him to take part in the social life of the community where he may go as a teacher.

ATHLETICS.

Special work in athletics is organized for these students. They have their athletic teams and engage in contests with neighboring schools.

COUNTY EXAMINATION COURSES.

Special review courses will be offered for all teachers who desire to raise the grade of their county certificate. These courses will be offered during the last half of the second semester and in the summer term. They will not only prepare the student for the county examination, but will give him credit toward a state certificate.

High School Courses.

JUNIOR HIGH SCHOOL.

FIRST YEAR.

FIRST SEMESTER.

Required subjects:	
English	5
Arithmetic	5
History	5
Spelling	5
Geography	3
Penmanship	2
Music	3
Electives (one):	
Manual Training	5
Sewing	5
Printing	5
Arts and Crafts	3

SECOND SEMESTER.

Required subjects:	
English	5
Arithmetic	5
History	5
Hygiene	3
Penmanship	2
Music	3
Electives (one):	
Manual Training	5
Printing	5
Sewing	5
Arts and Crafts	3

SECOND YEAR.

FIRST SEMESTER.

Required subjects:	
English	5
U. S. History	5
Gen. Mathematics	5
Music	3
Penmanship	2
Physical Training	2
Electives (two):	
Vocational Latin	
Conversational French	
Elementary Science	3
Manual Training	5
Sewing, Cooking	
Arts and Crafts	

SECOND SEMESTER.

Required subjects:	
English	5
History	5
Gen. Mathematics	5
Music	3
Physical Training	2
Electives (two):	
Vocational Latin	
Conversational French	
Science	
Manual Training	
Sewing, Cooking	
Arts and Crafts	

THIRD YEAR.

FIRST SEMESTER.

Required subjects:	
English I	
Gen. Mathematics I or Algebra I	
Electives (two):	
Drawing	
History I	
Latin	
French I	
Physical Geography I	
Manual Training—Bench Woodwork, Sewing, Domestic Arts I	

SECOND SEMESTER.

Required subjects:	
English II	
Gen. Mathematics II or Algebra II	
Electives (two):	
Drawing	
History II	
Latin	
French II	
Physical Geography II	
Manual Training—Joinery	
Sewing, Domestic Arts II	

SENIOR HIGH SCHOOL.

FIRST YEAR.

FIRST SEMESTER.

Required subjects:
English III
Mathematics III or Geometry I
Biology I

Electives (one):
History III
Latin
French
Drawing
Manual Training—Wood Turning
Sewing—Domestic Arts III

SECOND SEMESTER.

Required subjects:
English IV
Mathematics IV or Geometry II
Biology II

Electives (one):
History IV
Latin
French
Drawing
Manual Training—Pattern Making
Sewing—Domestic Arts IV

SECOND YEAR.

FIRST SEMESTER.

Required subjects:
English V
Physics I
Physical Training

Electives (two):
History V
French
Latin
Agriculture
Drawing
Manual Training—Forging
Cooking—Domestic Science I
Arithmetic

SECOND SEMESTER.

Required subjects:
English VI
Physics II
Physical Training

Electives (two):
History VI
French
Latin
Agriculture
Drawing
Manual Training—Foundry
Cooking—Domestic Science II
Algebra III

THIRD YEAR.

FIRST SEMESTER.

Required subjects:
American History VII
Physical Training

Electives (three):
Chemistry
Physiology
Drawing
Manual Training—Elem. Machine
English VII
Cooking—Domestic Science III
Management and Methods
French
Latin

SECOND SEMESTER.

Required subjects:
American History VIII
Physical Training
Civics IX

Electives (two):
Chemistry
Psychology
Drawing
Manual Training—Elem. Machine
Cooking—Domestic Science IV
Arithmetic
French
Latin

SUBJECTS BY GROUPS.

English, 3 units—required.

Mathematics, 2 units—required.
  Algebra or General Mathematics, 1 unit.
  Geometry or General Mathematics, 1 unit.

Science, 4½ units—2 units required.
  Biology, 1 unit.
  Physics, 1 unit.
  Chemistry, 1 unit.
  Physical Geography, 1 unit.
  Physiology, ½ unit.
  Agriculture, 1 unit.

History, 3½ units—1½ units required.
  Ancient History, 1 unit.
  Medieval History, Modern History, 1 unit.
  American History. 1 unit.
  Civics, ½ unit.
  English History, 1 unit.

Language, 6 units—none required.
  Latin, 3 units.
  French, 3 units.

Junior high-school students will not be allowed to elect Latin I and II in the third year unless they have had Vocational Latin, nor French I and II unless they have had Conversational French in the second year of the junior high school.

Vocational Subjects—none required.

Domestic Art, 2 units (Drawing, 1 unit).
Domestic Science, 2 units.
Industrial Art, 4 units (Drawing, 2 units).

Professional Subjects, 1 unit required for certificate.

Psychology, ½ unit.
Management and Methods, ½ unit.

Students asking for One-year State Certificate should elect Psychology, Methods and Management, and Arithmetic. In addition to the professional work, music and drawing advised.

Students electing from the language or vocational group should complete at least two units from that group. Credit for less than one unit will not be given in those groups.

Agriculture.

The object of the high-school work in agriculture is to prepare young people to teach agriculture in our rural schools. To this end, therefore, the courses are short, practical, and contain a minimum amount of theoretical matter.

The campus and gardens consist of fifty acres. About twenty-five acres of this ground is well adapted for experimental and demonstration work in horticulture and agriculture. A large permanent garden is being planned, and prospective agricultural teachers will be given an opportunity to direct the work of the Model School children.

A part of the garden will be devoted to vegetable growing by the domestic science students. Students are now given an ample opportunity to do work in plant propagation and plant breeding.

Students are arranged in sections and do farm work of some kind each week. By working under the agriculturist an opportunity is afforded to show the pupil the application of the principles learned in the classroom, and at the same time to become familiar with the details of farm life and farm practice.

Course 1.—ELEMENTARY AGRICULTURE. This is an elementary course in agriculture designed especially for those who wish to cover the whole subject of agriculture in one course, and gives a limited preparation for teaching the subject in the rural schools. Spring and summer terms. One-half unit credit.

Course 2.—HORTICULTURE. The course is practical rather than theoretical. Lectures will be given on vegetable gardening, fruit growing, floriculture, and the propagation of trees and shrubs. One-half unit credit.

Course 3.—ANIMAL HUSBANDRY. In this course the students are given lectures in stock judging, breeds of farm animals, breeding, and the feeding of farm animals. Third year, first term. One-half unit credit.

Course 4.—FARM DAIRYING. Lectures are given on the various types of dairy cattle, selection of the individual cow, management of dairy cattle, butter making, and the packing and marketing of dairy products. One-half unit credit.

Course 5.—SCHOOL GARDENING. All students intending to teach agriculture should take this course. In addition to the regular Experiment Station, the school maintains a school garden, in which the students will do all work in preparing the soil and planting the crop. In the school garden will be found all varieties of vegetables, ornamental grasses, shrubs, and forestry.

In this course the student will be given an opportunity to direct children in the Model School and will receive valuable experience in handling and laying out school gardens. Fourth year, spring term. One-half unit credit.

Biological Sciences.

The purpose of the courses in biology is to give the student that knowledge of botany, zoölogy, physiology and bacteriology which he needs in order to produce the best conditions of life for himself and for those depending on him. It is impossible to live effectively or to control the biological forces conditioning the existence not only of man, but of plants and animals as well, without a knowledge of biological laws.

The courses are designed especially with these ends in view. The laboratories are well equipped to offer the work. The equipment consists of microscopes, aquaria, biology cases, microscopic slides, and a good teaching museum.

Courses 1 and 2.—GENERAL BIOLOGY. These courses are designed to serve as an introduction to the elementary forms and forces of living nature. Here the student becomes acquainted with the common animals and plants that enter into the practical activities of the home and farm. Much of the work in the fall and spring is done out of doors. Required of first-year students in all groups. Daily for one year. One unit credit.

Course 3.—NATURE STUDY. This course aims to adapt zoölogy and botany to elementary instruction, and is designed especially for teachers in the city schools. It attempts to answer the question, "What knowledge of living forms is suitable to children between the ages of six and fifteen?" The animal and plant life of this locality is fairly abundant and varied. The agricultural plot furnishes an excellent opportunity for gardening and horticulture. Daily, spring and summer terms, twenty weeks. One-half unit credit.

Course 4.—ELEMENTARY ZOÖLOGY. This course presents a connected study of the function and structure of animal types selected to illustrate the development of the animal kingdom. Systematic work is done with the insects and different groups of the vertebrates. One-half or one unit credit.

Course 5.—ELEMENTARY PHYSIOLOGY. This is a course in elementary physiology and hygiene designed especially for the elementary-school teacher. It deals mainly with the function of the organs of the human body and the hygienic conditions under which they do the best work. Attention is given to elementary-school hygiene. One-half unit credit.

Commercial Course.

A certificate is given for the completion of this course; also, two years' college work is given in commerce, leading to a life Diploma. See page 64.

FIRST YEAR.

First semester:		*Second semester:*	
Booking	½	Bookkeeping and Accounting	½
Business Arithmetic	½	Business Arithmetic	½
Commercial Geography	½	Business Law	½
Penmanship	¼	Penmanship	¼
Elect	¼	Advanced Grammar	½

SECOND YEAR.

First semester:		*Second semester:*	
Shorthand	½	Dictation and Office Practice	½
Applied Business English	½	Commercial Correspondence	½
Spelling and Business Forms	½	Typewriting	½
Typewriting	½	Elect	¼

BOOKKEEPING. General law of debit and credit. Use of journal, cash book, purchase book, sales book, and making of all business statements. Handling of notes, drafts, and checks. Shipments and consignments. Some corporation work. Year subject. One unit credit.

BUSINESS ARITHMETIC. Solving actual business problems. Working time sheets. Practical measurements. Study of short methods. Year subject. One unit credit.

PENMANSHIP. Developing of a plain, legible, rapid, business hand. Year subject. Half unit.

SHORTHAND. Complete study of the manual. Text, Gregg. Twenty weeks. Half unit.

DICTATION AND OFFICE PRACTICE. Advanced shorthand. Taking of dictation from new matter. Working speed to 100 words per minute. Court testimony. Doing actual office work. Twenty weeks. Half unit.

APPLIED BUSINESS ENGLISH. Careful study of business phrases. Rules for punctuation, and drills in their application. Twenty weeks. Half unit.

COMMERCIAL CORRESPONDENCE. Study of letter forms. Writing all classes of business letters, with enclosures. Learn to do by doing. Careful study of postal regulations and different classes of mail matter. Twenty weeks. Half unit.

TYPEWRITING. Writing of charts. Care and repair of machines. Drills for speed. Working of speed to forty words per minute. Year subject. One unit.

SPELLING AND BUSINESS FORMS. Study of roots, prefixes and suffixes. Spelling drills. Study of checks, notes, drafts, deeds, mortgages, and writing of same. Twenty weeks. Half unit.

Drawing.

JUNIOR HIGH SCHOOL.

The drawing courses in the Junior High School are planned to meet the needs of the Departments of Industrial Arts and Household Economy. The drawing instructions are adapted to meet the needs of the pupil in his special work. Certain common fundamentals are emphasized throughout the course to give unity to the progress while acquiring technic and skill. The methods used will give special attention to securing definite results which will be of practical service, and not to doing abstract exercises in drawing. The work of boys will be fitted to meet the demands of the shop work, and that of the girls will acquire fundamentals of home decoration and costume design.

SENIOR HIGH SCHOOL.

The drawing courses in the Senior High School are to meet the needs of pupils who are preparing themselves for higher education or for definite professions in practical life. The acquirement of skill and technic will be emphasized, with development of taste and appreciation. The work of the boys will cover the field of practical mechanical drawing, developing into architectural and home planning, or into machine drawing. The work of the girls will be developed among lines leading toward a most thorough understanding of the principles underlying home decoration and costume design as well as in art application.

Course 1.—FREE-HAND DRAWING FOR BOYS. A course for the development of technique and the elementary principles of working drawings, lettering and shop sketching.

Course 2.—FREE-HAND DRAWING FOR GIRLS. Pictorial and decorative drawing in outline and in color. Still life, groups and objects are used to develop an understanding of perspective history of art.

Course 3.—DESIGN FOR BOYS. Principles of design, spacing and proportion applied to the construction of objects suitable for shop use.

Course 4.—DESIGN FOR GIRLS. Principles of design, lines of grace and beauty, spacing and proportions. Units, borders, conventionalization of natural forms adapted for use in the sewing department. Study of ornament.

Course 5.—PENCIL, CHARCOAL, PEN AND INK AND COLOR OUTLINE, AND LIGHT AND SHADE DRAWING. Perspective principles with shades and shadows. History of Egyptian and Greek architecture.

Course 6.—APPLIED DESIGN. Application of the principles of design to actual problems to be constructed in the shop or sewing department.

Course 7.—ELEMENTARY MECHANICAL DRAWING. The student will attain proficiency in the use of instruments. A knowledge of orthographic projections, sections, developments, working drawings, etc., as applied to practical work, is given.

Course 8.—ADVANCED MECHANICAL DRAWING. A continuation of course 7 in which standard drawing-room conventions are studied and applied in the drawing of machine parts. Lettering, tracing, and blueprinting.

Course 9.—MACHINE DRAWING. This course is designed to round out the work in mechanical drawing as it relates to the metal trades. The use of conventions, standards and simple rules of empirical design are used in the designing of problems for construction in the shop.

Course 10.—ARCHITECTURAL DRAWING. Study of the classic orders of architecture, architectural design, plans and elevations of a simple cottage. Reading and lectures. Arrangement of rooms for convenience. Houses under process of construction are observed, and the work of the classroom developed from notes and sketches.

Domestic Art.

Course 1.—FIRST YEAR, FIRST TERM. (1) Review of principles learned in elementary school, and their application upon a problem in simple handwork, such as a fancy apron, a bag, etc. (2) Care and use of sewing machine. Simple machine problems; a kimono, kimono nightgown, bungalow apron, etc. (3) Begin study of textile fibers and their manufacture, with the emphasis placed upon economical purchasing. (4) Simple embroidery stitches applied upon Christmas work. (5) Lessons upon personal hygiene. (Free-hand drafting of patterns for apron, kimono, nightgown.) Fee for material used. One-half unit credit.

Course 2.—FIRST YEAR, SECOND TERM. (1) Continuation of textile study. (2) Use and alteration of commercial patterns. (3) Making a smock and plain wash skirt. (4) Fancy stitches applied to collar and cuffs, table runner, sofa pillow, or pillow slips. (5) Daintiness and simplicity emphasized in the making of underwear. Problem: Teddy bear. (6) Lessons covering hygiene of clothing, removal of spots, care and repair of clothing, selection of wardrobe suitable for a high-school girl. Fee for material used. One-half unit credit.

Course 3.—SECOND YEAR, FIRST TERM. (1) Care and use of sewing machine reviewed. (2) Making of cooking cap and apron (free-hand drafting). (3) Study of textiles: manufacture, simple tests, problems in suitability of fabric to purpose, color to individual, etc., economic buying, care of clothing. (4) Use and alteration of commercial patters. (5) Making of worsted dress. Fee for materials used. One-half unit credit.

Course 4.—SECOND YEAR, SECOND TERM. (1) Use of attachments of machine. (2) Finishes and trimmings for wash dress. (3) Making of wash dress, pattern drafting, practice in fitting. (4) Hat making and trimming, renovation of millinery materials. (5) Lessons in costume design, selection and care of clothing and household textiles, hygiene of clothing, personal hygiene. Fee for material used. One-half unit credit.

Domestic Science.

Course 1.—THIRD YEAR, FIRST TERM. Study of laboratory equipment. Care of range, refrigerator, sinks, utensils, study of fuels. Classification of foods, source, composition, effect of heat, digestibility. Preparation of beverages, fruits, starchy foods, vegetables, making of sauces; sugar cookery. Making of milk, egg and cheese dishes. Fee for material used. One-half unit credit.

Course 2.—THIRD YEAR, SECOND TERM. Continuation of course 1. Study of cuts of meat. Preparation of meat, fish, and gelatine dishes. Study of meat substitutes. Study of flour and various leavening agents. Doughs and batters. Preparation of popovers, griddle cakes, waffles, muffins, cookies, cakes, pastry and bread, salads and frozen desserts. Fee for material used. One-half unit credit.

Course 3.—FOURTH YEAR, FIRST TERM. Personal sanitation; household sanitation: location of house, ventilation, plumbing, disposal of waste. Household management: Care of the house, marketing, division of income, keeping accounts. Care and feeding of infants and young children. Fee for material used. One-half unit credit.

Course 4.—FOURTH YEAR, SECOND TERM. Invalid cookery. Study of relation of diet to disease. Preparation of trays for invalids. Elementary dietetics. Study of food values. Serving of meals. Preserving and canning fruits. Fee for material used. One-half unit credit.

EDUCATION.

ELEMENTARY PSYCHOLOGY I. This course is primarily for high-school students intending to teach. The student is introduced to the subject from a functional standpoint, emphasis being laid on what the mind does rather than what it is. One-half unit credit.

MANAGEMENT AND METHODS II. This course is intended for students completing the secondary course, who plan to teach before entering college. It anticipates the problems of method and management the beginning teacher meets in the rural and village school. One-half unit credit.

Observation of Teaching.—The Training School will be open to prospective teachers for the purpose of observation. If conditions permit, one-half unit credit may be secured.

English.

Course 1.—GRAMMAR. A course in which English grammar is made practical and profitable—a reasoning, not a memory subject—and presented as the structural foundation of language. One-half unit credit.

Course 2.—COMPOSITION. Both oral and written. A study of sentence structure, punctuation and spontaneity of expression. Correlated with and based upon current events. One-half unit credit.

Course 3.—COMPOSITION AND RHETORIC. Description, narration, and themes. One-half unit credit.

Course 4.—COMPOSITION AND RHETORIC. Exposition, argumentation, poetic forms. One-half unit credit.

Course 5.—AMERICAN LITERATURE. A study of the different schools of writers and the representative authors of each, with representative classics. One-half unit credit.

Course 6.—MYTHOLOGY AND ENGLISH LITERATURE. Guerber's Myths correlated with a study of Milton's minor poems, and other illustrative classics. One-half unit credit.

Course 7.—A STUDY OF ENGLISH PROSE CLASSICS. Addison, Lamb, Macaulay, Ruskin, Stevenson, Kipling. The works of these authors to be correlated with some phase of composition work, such as paragraphing, the making of logical outlines, etc. One-half unit credit.

Geography.

Courses 1 and 2.—PHYSICAL GEOGRAPHY. This course is designed to open the doors of science to the secondary pupil. To introduce topography, climate and soil as economic controls. To bring the student into harmony with his geographic environment. One unit credit.

Course 3.—GEOGRAPHY REVIEW. This course is designed for high-school and college students who desire a general review of subject matter of political geography, together with methods of presentation. One-half unit credit.

Course 4.—COMMERCIAL GEOGRAPHY. This course is designed to give the high-school student a knowledge of the geographic basis of commerce. It consists of text work, library reading, and the working out of geographic commercial problems. One-half unit credit.

History and Social Sciences.

JUNIOR HIGH SCHOOL.

Course 1.—ANCIENT HISTORY. This covers an introductory study of the ancient nations of Egypt, Babylonia, Chaldea, Assyria, Phœnicia, the Hebrews, India, and China. The major part of the course is given to Greece and her institutions. Offered five hours per week, the first semester of the second year, Normal High School course, and is essential to History of Education. One-half unit credit.

Course 2.—ANCIENT HISTORY. This course is given to the study of Rome through her rise and fall, and also the transitional period from 476 A. D. to the death of Charlemagne, 814. Offered five hours per week, second semester, second year, Normal High School course. This is essential to History of Education. The work in courses 1 and 2 is done from outline. Special reference for library work, with map drawing, special papers, and special illustrated lectures by the teacher. Daily. One-half unit credit.

SENIOR HIGH SCHOOL.

Course 3.—MEDIEVAL HISTORY. This course covers the period from the death of Charlemagne to the close of the fifteenth century. In this course special attention is given to the rise of nations after the fall of Rome and the struggle for supremacy between the church and state. Offered first semester, third year, Normal High School course. Daily. One-half unit credit.

Course 4.—MODERN HISTORY. This course takes up the Renaissance, Reformation, Revolutions, social life of the times, rise and growth of constitutional governments, with the fall of absolutism. Offered the second semester of the third year, Normal High School course. Daily. One-half unit credit.

Course 5.—AMERICAN HISTORY. This course covers the whole range of American history from 1492 to date. The aim is to give special attention to a mastery of the facts, and chronology with reference to the relation of these facts to growth and development of our institutions. This course runs through the year. The last six weeks will be given to Kansas history. One unit credit.

Course 6.—CIVICS. This course is to give the student a thorough understanding of the principles and practical workings of our government and prepare for intelligent citizenship. One-half unit credit.

Course 7.—ELEMENTARY ECONOMICS. In this course attention is given to the fundamental principles of economics, with special work assigned to students suited to that course, such as rural economics, home economics, and social problems of city and farm. In our age of political, social and economic problems this course is indispensable, and lays well the foundation for further study in economics and society. Offered the second semester, fourth year. One-half unit credit.

Course 8.—ENGLISH HISTORY. A short course based upon Cheyney's text, to aid pupils in understanding the basis of many of our modern institutions which are otherwise not clear in the student's thinking. One unit credit.

Latin.

SENIOR HIGH SCHOOL.

Course 1.—ELEMENTARY. D'Ooge: Latin for Beginners, lessons 1 to 35, inclusive. Special attention to forms; daily Latin and English exercises; vocabulary drill; observation of English derivatives. One-half unit credit.

Course 2.—ELEMENTARY (continued). D'Ooge completed. Daily drill on forms, vocabulary, idioms, derivations. Influence of Latin on English grammar and spelling. One-half unit credit.

Course 3.—CÆSAR. Cæsar: De Bello Gallico, books 2, 3, 4. Baker and Inglis: Latin Prose Composition. Special attention to phrasing, idioms, and fluency of translation. Roman warfare and the Great War. One-half unit credit.

Course 4.—CÆSAR (continued). De Bello Gallico, book 1 and selections from 5, 6, 7. Baker and Inglis: Latin Prose Compostion. Ancient Germany and Britain. One-half unit credit.

Course 5. Cicero's first, second and third orations against Catiline. Baker and Inglis' Composition, part II, begun. One-half unit credit.

Course 6.—Cicero's fourth oration against Catiline. The Manilian Law. Study of Archias and Roman Republic. Baker and Inglis' Composition, part II, completed. One-half unit credit.

JUNIOR HIGH SCHOOL.

VOCATIONAL LATIN.—*Second Year.* First semester: Nouns, adjectives, prepositions, prefixes, suffixes, cases. Derivative notebooks and scrapbooks. D'Ooge's Latin for Beginners will be used for material. Second semester: verbs, pronouns. History of the Latin and Greek elements in English. Preparation of a Sabin exhibit. Especially recommended for pupils planning a course in commerce, science, literature, or the learned professions.

ELEMENTARY.—*Third Year.* Pupils who have not had Vocational Latin must postpone this course to the Senior High School. Latin I, first semester; Latin II, second semester.

French.

JUNIOR HIGH SCHOOL.

CONVERSATIONAL FRENCH.—*Second Year.* First semester: Conversation on the everyday surroundings of the pupils; songs, games, memorizing of selected portions of prose and verse. Second semester: Conversation continued, with easy readings. Fables, poems, songs, short stories.

ELEMENTARY.—*Third Year.* Pupils who have had Conversational French will take French I, first semester; French II, second semester. Others will postpone French I and II until the first year, Senior High School.

SENIOR HIGH SCHOOL.

Course 1.—ELEMENTARY. First semester. Fraser and Squair's Shorter French Course, Lessons I to XXVI. Snow and Lebon's Easy French. Careful study of pronunciation. Conversation and dictation, with translation into English of difficult phrases only.

Course 2. Second Semester. Shorter French Course, Lessons XXVII to LII. Easy French completed. Memorizing of songs and poems.

Course 3.—INTERMEDIATE. First semester. Shorter French course, Lessons LIII to LXXX. Review of elements. Dictation, memorizing, much oral and written work. Reading of about 100 pages selected from Bruno, Verne, Daudet, Mérimée.

Course 4. Second semester. Shorter French Course, completed. Composition, François or Levi. Reading, some intensive, some rapid—about 150 pages from LeSage, Sandeau, Labiche, and others.

Course 5. First semester. Advanced composition and letter writing. Reading of about 200 pages from more difficult authors. Dictation, memorizing, résumés.

Course 6. Second semester. Readings from Loti, Coppée, George Sand, Chateaubriand, etc. Methods of course 5 continued.

Manual and Industrial Arts.

WOODWORK.

Course 1.—BENCH WORK. Includes a study of tools—as uses, names of parts, adjustments, their care, and how to sharpen; the making of a few important joints used in wood construction and their application in making useful projects; a study of materials, fastenings, etc.; notebook work, covering the talks, demonstrations, problems sketches. Five double periods per week for twenty weeks. One-half unit credit.

Course 3.—JOINERY. This course includes a study of tools, as uses, names of parts, adjustments, care of, and how to sharpen; the making of important joints and their application in the making of useful projects; a study of the different woods and materials used; demonstrations, and notebook work. Five double periods per week for twenty weeks. One-half unit credit.

Course 5.—WOOD TURNING. Includes the care and use of turning tools, care and adjustments of lathe, turning between centers, chuck, faceplate and screw-center work, polishing in the lathe. Exercise work, followed by applications in some useful project. Five double periods per week for twenty weeks. One-half unit credit.

Course 7.—PATTERN MAKING AND MOLDING. Includes instruction in the use and care of tools and machinery; instruction in allowances for draft, shrinkage, finish, shake and warp; a study of all the interests involved in the foundry of each pattern; and the making of patterns involving the fundamental principles of the trade. Five double periods per week for twenty weeks. One-half unit credit.

Course 9.—CABINETMAKING. Includes the use of general woodworking tools and machines; designing and construction of furniture and cases for home and school use; a study of woods; and a carefully prepared notebook on the work done, covering fastening devices, materials, demonstrations, etc. Five double periods per week for twenty weeks. One-half unit credit.

Course 11.—BUILDING CONSTRUCTION. Designed to teach the fundamentals of building construction applied to the making of useful projects about the home. The work is largely individual, and encouragement is given to secure the greatest possible variety of projects. Five double periods per week for twenty weeks. One-half unit credit.

METAL WORK.

Course 2.—FOUNDRY. A course in which the simpler problems of foundry practice are studied, including green dry sand and cored work, the use of the brass furnace and cupola. Five double periods for twenty weeks. One-half unit credit.

Course 4.—FORGING. A course in which the theoretical as well as the practical side of forging is studied in connection with the simpler farm and industrial problems. Five double periods for twenty weeks. One-half unit credit.

Course 6.—MACHINE-SHOP PRACTICE. Elementary work in chipping, filing, fitting, and practical experience in operating the more common machine tools. Five double periods for twenty weeks. One-half unit credit.

Course 7.—MACHINE SHOP. A continuation of course 6.

Mathematics.

Course 1.—ALGEBRA 1. This course covers the fundamental operations, factoring, fractions, simple equations, and graphical representation. First semester, third year of the Junior High School. One-half unit credit.

Course 2.—ALGEBRA 2. A continuation of course 1, including ratio and proportion, powers and roots, complex numbers, quadratic equations, and graphical representation of equations of second and higher degrees. Second semester, third year of Junior High School. One-half unit credit.

Course 3.—GEOMETRY I. Plane geometry, including the general properties of plane rectilinear figures; the circle and the measurement of angles, regular polygons; solution of numerous original exercises and practical problems. First semester. One-half unit credit.

Course 4.—GEOMETRY II. Essentials of plane geometry completed, numerous original and practical exercises. Second semester: One-half unit credit.

Course 5.—ARITHMETIC. A rapid review of the essential topics of practical value, with emphasis on the short methods in common use. Considerable stress is placed upon the degree of accuracy required in the problems assigned, and only such problems are considered as have close similarity with those met in the commercial or industrial occupations. This course is designed for the special benefit of rural and grade teachers. Prerequisite, two years of high-school mathematics. One-half unit credit.

Course 6.—ALGEBRA III. This course completes the work in algebra usually given in high schools. It includes a review of linear and quadratic equations, radicals, involution, evolution, progressions, logarithms and imaginaries. Prerequisites, courses 1 to 4, or their equivalent. One-half unit credit.

Course 7.—INDUSTRIAL MATHEMATICS I. A course in elementary mechanics as applied to agricultural and shop machinery. Carpentry and building; sheet-metal work; bolts, screws and rivets; shafts, pulleys and gears; plumbing and hydraulics; steam engines; mathematics for machinists. First semester. Prerequisite, at least one year of high-school mathematics. One-half unit credit.

Course 8.—INDUSTRIAL MATHEMATICS II. A continuation of course 7. Second semester. Prerequisite, course 7. One-half unit credit.

Course 9.—VOCATIONAL MATHEMATICS I. This course is designed especially for girls, and deals with the computations found in all the principal vocations that women are likely to enter. Food computations; house construction and furnishing; dressmaking and millinery; arithmetic for office assistants, salesgirls, cashiers, and nurses; and a thorough drill in the metric and English systems and measures. Prerequisite, at least one year of high-school mathematics. First semester. One-half unit credit.

Course 10.—VOCATIONAL MATHEMATICS II. A completion of the topics outlined in course 9. Second semester. One-half unit credit.

Methodology.

Course 1.—METHODS FOR SENIORS IN HIGH SCHOOL. The high-school course provides for a half unit in methods and management, and in meeting this requirement in the professional course a class in methods is maintained the last semester for those who are planning to teach directly following their graduation from high school. This course includes methods in the various studies taught in the elementary schools. Special consideration is given to difficult portions found in the state texts in the common branches. One-half unit credit.

Physical Sciences.

INDUSTRIAL PHYSICS.

Course 1.—MECHANICS AND HEAT. An elementary course, consisting of classroom demonstrations, recitations, laboratory work and field trips to develop and apply the principles of mechanics and heat. Emphasis is placed largely upon the industrial applications of these principles to familiar mechines and instruments, such as steam and gas engines, pumps, hydraulic presses, pressure gauges, water and gas meters, speed indicators, pulleys, blocks and tackles, and chain hoists. First semester. Three class periods and two double laboratory periods per week. One-half unit credit.

Course 2.—ELECTRICITY, MAGNETISM, SOUND AND LIGHT. An elementary course of demonstrations, recitations and laboratory work in practical electricity, sound and light. The boys study the construction and operation of such electrical devices and machines as dynamos, motors, transformers, arc lights, meters, electric irons, toasters, stereopticon machines, telephones, telegraph, wireless systems. Second semester. Three class periods and two double laboratory periods per week. One-half unit credit.

HOUSEHOLD PHYSICS.

Course 1.—HEAT AND MECHANICS. An elementary course in the principles of heat and home mechanics, consisting of recitations, demonstrations and laboratory work. Problems studied are heating of homes, efficient use of fuels, proper methods of ventilation, moisture in air, gas and water meters, sewing machines, vacuum cleaners, sanitary plumbing, water supply, etc. Three class periods and two double laboratory periods per week. One-half unit credit.

Course 2.—LIGHT, SOUND AND ELECTRICITY. Continuation of course 1. Some of the subjects studied are principles of good lighting, measurement of light values, musical instruments, principles of harmony, electric door bells, electric meters; operation and cost of operating electric irons, lights, toasters and fans, etc. Three class periods and two double laboratory periods per week. One-half unit credit.

INDUSTRIAL CHEMISTRY.

Course 1. This course consists of the study of such subjects as air, water, fuels, and cleaning agents, together with the easier tests for the classes of plant and animal foods. Emphasis is placed upon a clear understanding of the chemistry of the home and farm, as this course is designed for students of the domestic art, science and agriculture courses. Laboratory fee for material used. One-half unit credit.

Course 2.—INDUSTRIAL CHEMISTRY. A continuation of course 1. One-half unit credit.

Course 3.—GENERAL SCIENCE. This course, as the name implies, includes the easy parts of the physical sciences. The course aims to acquaint the student with his physical environment, also a basis for more extensive work in any of the physical sciences. One-half unit credit.

STUDENT ROLL.

POSTGRADUATES.

Beckett, Fern Davis; Garden City.
Bogue, Mattie; Onaga.
Burdette, Anna Lois; Winfield.
Burger, Esther L.; Fort Scott.
Burr, Bettie; Galena.
Dennis, Ivan G.; McCune.
Durkin, Margaret Nora; Weir.
Gaw, Emily Elmeir; Girard.
Gibson, E. Louise; Pittsburg.
Hance, Ivena; Bartlett.
Humphrey, Bess; *Hume, Mo.*
Koopman, Minnie C.; *Sparta, Ill.*
Lesslie, Jessie C.; Independence.
McGinnis, Fred; McCune.
Molloy, Anna T.; Pittsburg.
Morgan, Katie; Columbus.
Packard, Rose; *Marion, Ohio.*
Rees, Ernest C.; Girard.
Romig, Ida Viola; Coffeyville.
Sinclair, Benjamin Franklin; Arlington.
Stevens, Evan Watson; Ford.
Stiles, Ethel; Pittsburg.
Swain, Bernice Adda; Weir.
Todd, Glenn W.; Altamont.

COLLEGE SENIORS.

Allman, Helen Charlotte; Pittsburg.
Atwood, Vivian; Pittsburg.
Baird, Mary Anna; Opolis.
Ball, Eva Daly; Independence.
Berry, Carrie Annette; *Corsicana, Tex.*
Bold, Blanche; Frontenac.
Born, Marshall Earl; Holton.
Brandenburg, Amy Altana; Pittsburg.
Bresee, Nadine; Pittsburg.
Brewer, Hatye Reve; Pittsburg.
Briggs, Phillip Orville; Pittsburg.
Butler, James Clay; Chetopa.
Buvinger, Blanche A.; Chetopa.
Cadwell, Kitty J.; Caney.
Carey, Henry Robert; Pittsburg.
Cass, Mrs. Edith L.; Savonburg.
Cass, George Theodore; Savonburg.
Catlett, Merton L.; Columbus.
Dale, Olivia Lanyon; *Carthage, Mo.*
Davidson, Ross Wallace; West Mineral.
Doles, Iva Edith; Haven.
Ennis, Margaret; Pittsburg.
Fair, Faye R.;* Independence.
Ferguson, Nita; Pittsburg.
Fleming, John Allen; Pittsburg.
Frey, Marie; *Dallas, Texas.*
Friley, Walter L.; *Independence.*
Goffe, Vera E.; Pittsburg.
Goodwin, Perva Margaret; Pittsburg.
Guthridge, L. A.; Independence.
Halsey, Kathryn Amelia; Coffeyville.
Hallan, Ethel Marie; Pittsburg.
Hankins, Russell E.; Burden.
Hatton, Ethel Marie; Pittsburg.
Heigele, Margaret; Iola.
Hildebrand, Elizabeth; Hutchinson.
Hill, Mary Belle; Hutchinson.
Hollenbaugh, Mabel; *LaVerne, Cal.*
Hoover, Lucile; Burlingame.
Hopper, Bessie; Lansing.
Hudson, Helen Adele; Fort Scott.
Hughes, Anna Elizabeth; Fort Scott.
Iliff, Ethel; Cherokee.
Jay, Gay Maude; Coffeyville.
Jones, Iona E.; Pittsburg.
Jones, Zell Margean; Yates Center.
Lance, Bertha Lois; Pittsburg.
Lance, John F.; Pittsburg.
Locke, Ruth Louise; Erie.
Long, Maggie May; Erie.
Lyerla, Walter S.; Chanute.
McAdoo, Ruby Edna; Pittsburg.
McCue, Ernest F.; Mound Valley.
McBee, Grace Emma; Pittsburg.
McBurney, George R.; Sterling.
McDonald, Edna; Pittsburg.
McQuiston, Julia; Independence.
McWilliams, Bessie; Fort Scott.
Marsh, Flora Luella; Pittsburg.
Mernitz, Edna Pauline; *Tivoli, Tex.*
Meyer, Amelia Pauline; Girard.
Miller, Charles Marvin; Altamont.
Moody, Charles R.; Columbus.
Morgan, David Max; *Joplin, Mo.*
Norris, Hugh; *Sherman, Tex.*
O'Dell, Claude W.; *Asbury, Mo.*
Oliver, Anna; Pittsburg.
Oliver, Salina; Pittsburg.
Palmer, Frances E.; Pittsburg.
Penn. Umphrey Marshall; Atchison.
Perkins, Ruth E.; Galena.
Phelps, Elsie Inice; Pittsburg.
Phillips, Clyde Ulysses; Columbus.
Piper, Robert H.; Scammon.
Potter, C. Earl; Carlyle.
Priestley, Clara Odessa; Pleasanton.
Quackenbush, Charles; Pittsburg.
Rambo, William L.; Mulberry.
Reese, Hannah; Pittsburg.
Reese, Ivor; Pittsburg.
Reeves, Homer Leo; Winfield.
Rencenberger, William; Pittsburg.
Robinson, Charlotte; Hutchinson.
Robinson, Charles S.; Pittsburg.
Romberger, Nellie Marie; Chanute.
Romig, Ida Viola; Coffeyville.
Rose, Marion N.; Fort Scott.
Sandidge, Allen Wilson; Mulberry.
Selanders, Fanny; Garnett.
Shenk, Noah H.; Mulberry.
Sholtz, Edward F.; Pittsburg.
Shumard, Velma; Colony.
Skidmore, Albert; Cullison.
Skinner, Maude Beatrice; Cherokee.
Skourup, Elnora Catherine; Pittsburg.
Smith, Glenn D.; Frontenac.
Smith, Helen Jane; Pittsburg.
Smith, Lowell Everett; Independence.
Smith, Pearl Emma; Galena.
Stephens, Sara; Pittsburg.
Stevens, Maude; Garnett.
Summers, Ruth Prudence; Pittsburg.
Stuckey, Laura D.; *Carthage, Mo.*
Swayze, Paul David; Pittsburg.
Twente, Mrs. Petrea N.; Baxter Springs.
Vaughan, Ima Jean; *Wolfe City, Tex.*

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* Deceased.

COLLEGE SENIORS—CONCLUDED.

Vietti, Frank; Pittsburg.
Waddle, Mabel Viola; Osage City.
Weare, Edna Blanche; Pittsburg.
Wells, James Ralph; Cedar Vale.
Wells, Viola Virginia; Colony.
Willard, Mabel Grace; Arcadia.
Woodburn, Winona Adelaide; Holton.
Worden, Arthur Milton; Wellington.
Yates, Anna; Pittsburg.
Young, Hattie Emmeline; Galena.
Young, Minnie Ethel; Galena.

COLLEGE JUNIORS.

Alexander, Gladys Nellie; Pittsburg.
Allison, Avis Maude; Pittsburg.
Archer, Tressa Alda; Salina.
Ash, Ursula; Pittsburg.
Baker, Barney McKinley; *Grove, Okla.*
Baker, Bessie M.; Oswego.
Baldwin, Romola Clark; Pittsburg.
Betts, Maybelle Elizabeth; Columbus.
Block, Beth; Pittsburg.
Bodelle, Effie M.; Osage City.
Bohannon, Alvin A.; Dillon.
Bond, Ora May; *Sherman, Tex.*
Bowlus, H. J.; Mulberry.
Bradley, Opaline Laoma; Parsons.
Brakey, Maude M.; Neodesha.
Brown, Nina Elizabeth; Pittsburg.
Bruno, Fannie Mae; West Mineral.
Bruno, Mary Helen; West Mineral.
Carey, Eugenia May; Pittsburg.
Carroll, Jane Morrow; Wichita.
Crowell, Mrs. J. C.; Pittsburg.
Denney, Nannie B.; Independence.
Dennis, J. Donald; Olathe.
Dienst, Mary Eleanor; Coffeyville.
Doughman, Mrs. Mellie Crabtree; Mound Valley.
Ellis, Ellen Juliet; Cherryvale.
Engelhardt, Pearl; Winfield.
Ennis, Marion; Pittsburg.
Esch, Marie Anna; Pittsburg.
Fields, Evelyn Laflora; *Taft, Okla.*
Fikani, John G.; Frontenac.
Fisher, Iva Fern; Harper.
Flaglie, Lena L.; *Joplin, Mo.*
Fogelberg, Ida Margreta; Pittsburg.
Ford, Mary E.; Mulberry.
Gardner, Norma Leona; Elsmore.
Gaw, Hannah Lee; Girard.
Gaw, Helen; Girard.
Gear, B. H.; Greensburg.
Gilmer, Olive Esther; *Webb City, Mo.*
Glaser, Helen Henrietta; Pittsburg.
Gould, Mary Tunnell; Pittsburg.
Grabske, Paul Raymond; Rosedale.
Grigsby, Mildred A.; Galena.
Hamrick, Myrtle; Pittsburg.
Hancock, Olive Ellen; Uniontown.
Harney, Zenana Florence; Independence.
Harris, Mrs. Louvina Dockery; Galena.
Hartman, Harry V.; Cherokee.
Hawkins, Ernest Jocquito; Fort Scott.
Helphrey, Lorena Helen; Wichita.
Hewitt, Mrs. Hazel Bell; Chetopa.
Highland, Esther May; McCune.
Hill, Lucy Catherine; Hutchinson.
Holman, Flo E.; Mulberry.
Huff, Mary Pearl; Galena.
Janes, Mabel Ruby; Farlington.
Jarrett, Leah Helen; Galena.
Lease, Daisie Viola; Redfield.
Lenski, Frank; Pittsburg.
Lorenz, Hattie Gertrude; Burr Oak.
Lucas, Alma; Pittsburg.
McColey, Fred Madison; Westphalia.
McDowell, Ruth Evelyn; La Cygne.
McGonigle, Margaret; Pittsburg.
McGregor, Jennette Alethea; Columbus.
McMinn, Mabel Cora; Baxter Springs.
Malcolm, George Robert; Pittsburg.
Martin, Mabel Shapley; *Lamar, Mo.*
Matter, William Everett; Pittsburg.
Matthews, Jesse Walton; Pittsburg.
Meador, Ellen; *Sarcoxie, Mo.*
Mertz, Edna Pauline; Potwin.
Mertz, Sister Mary Ursula; Paola.
Messersmith, Frank B.; *Alliance, Neb.*
Miller, Oral Angus; Mound Valley.
Milner, Lois; Parsons.
Moherman, Helen; Wellsville.
Monahan, Nora Delphine; Frontenac.
Moore, Florence Edwina; Pittsburg.
Moore, Jewell Edward; Independence.
Myers, Clara G.; Weir.
Nelson, Inez Mildred Ethel; Stark.
Nichols, Mary Edna; Pittsburg.
Nipple, Florence Marie; Mulberry.
Oberg, Ethel Louise; Mulberry.
Oliver, Hazel E.; Attica.
Patchin, Ruth Ella; *Elgin, Minn.*
Patton, Ruth V.; *Oklahoma City, Okla.*
Pazzie, Sophia; Frontenac.
Pease, William Ross; Topeka.
Person, Laura Elizabeth; Galena.
Philippi, Amelia Fedora; *Colgate, Okla.*
Pierce, Ruby Ann Walz; Pittsburg.
Piper, Robert Harold; Columbus.
Pittinger, Leah Leone; Cherryvale.
Potter, Jane M.; Weir.
Porter, Caroline Widner; Parsons.
Pratt, Gabriella May; Fort Scott.
Pritchett, Elizabeth; Pittsburg.
Procter, Jess Spencer; West Mineral.
Rader, Velma; Caney.
Rankin, Nellie Regina; Pittsburg.
Ransom, Donald Earl; Pittsburg.
Ratliffe, Hazel Helen; Wichita.
Reeves, Gula Marie; Pittsburg.
Rickey, Anna Flora; Pittsburg.
Robinson, Lily Emily; Columbus.
Robson, Mary Margaret; Yates Center.
Rodenberg, Lydia Minnie; Halstead.
Rodgers, Alza; *Gentry, Ark.*
Rushing, Mrs. Mary W.; Hutchinson.
Schauer, Elizabeth; Radley.
Schwab, Bessie Alice; Cherokee.
Scott, Wilma; Pittsburg.
Sergeant, Martha Gertrude; *Joplin, Mo.*
Smither, Reva Elizabeth; Pittsburg.
Sparks, Paul Chesley; *Joplin, Mo.*
Spencer, Bertha A.; *Carthage, Mo.*
Spicer, Herbert Cecil; Pittsburg.
Stamm, Gertrude Alene; Pittsburg.
Stansell, Ernest Snow; Kansas City.
Stonecipher, Ernest E.; Galena.
Taylor, Roy E.; Ottawa.
Tourtelot, Mrs. G. E.; Pittsburg.
Waddle, Elsie Lenore; Chanute.
Walter, Mary Luella; Altamont.
Watson, George Ezra; Fort Scott.
Watson, Neva LeNore; Pittsburg.
Webb, William;* Pittsburg.
Welch, Iva Belle; Pittsburg.
White, Florence; Weir.
Wilkins, Alma Belle; Cherokee.
Wingart, Frances Mae; Topeka.
Winn, Pauline; Coffeyville.
Wisner, Morely; Iola.
Wood, Clemmer; Independence.
Wolfe, Mary L.; MCune.
Wynn, Edith A.; *Tulsa, Okla.*
Yates, Robert; Pittsburg.
Yoos, May; Arcadia.
Young, Clara Amelia; Wichita.
Young, Rachel Fern; Coffeyville.
Young, William Rankin; Walnut.

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* Deceased.

COLLEGE SOPHOMORES.

Aldrich, Hazel Irene; Kingman.
Alexander, Gertrude M.; Pittsburg.
Allen, Margaret; Iola.
Ambler, Gladys Louise; *Omaha, Neb.*
Angell, Ethel Eleanor; Rosedale.
Austin, Leola May; Mulberry.
Baker, Myrtle Mae; Pittsburg.
Baldwin, Velma Clark; Pittsburg.
Barcus, Bessie Pearl; Baxter.
Barnes, Della; Parsons.
Barnes, Myrtle Elizabeth; Pleasanton.
Barnohouse, Mrs. Ethel Angell; Pittsburg.
Baxter, Lulu; Pittsburg.
Bayne, Rhoda; St. Paul.
Becker, Sybil Suzann; *Joplin, Mo.*
Black, Erma E.; Wichita.
Board, Dollie; *Joplin, Mo.*
Bomhoff, Coral Ethel; Pittsburg.
Borden, Hattie A.; Girard.
Bowen, Dorothy Margaret; Pittsburg.
Bowles, Fred Virgil; Walnut.
Bradey, Marie Edythe; Mineral.
Brandenburg, Merrill; Pittsburg.
Brands, Bessie M.; Great Bend.
Brazier, Blanche; Pittsburg.
Broadlick, Anna Margaret; Pittsburg.
Brown, Everette Stanley, Winfield.
Broyles, Magretta Lee; Pittsburg.
Bryan, Essie Lee; Galena.
Buckles, Lela Lois; Peru.
Buehler, Hazel Grace; Oswego.
Burns, Della Maud; Walnut.
Bushnell, Hilda Corine; Mound Valley.
Butler, Edna Fay; *Golden City, Mo.*
Caffey, Marguerite Winn; Pittsburg.
Cameron, Pearl Elizabeth; Altamont.
Capps, Daphna J.; Arcadia.
Carey, Mrs. Mary Rebecca; Osage City.
Carnagey, Charlsie Marie; La Cygne.
Carney, Georgia O'Hammil; Galena.
Carroll, Bessie May; Wichita.
Carter, Mrs. Anna E.; *Joplin, Mo.*
Carver, Jane Beatrice; Fort Scott.
Caskey, Nadine Margaret; Pittsburg.
Chambers, Estella Mae; Mulvane.
Chase, Ruby May; Iola.
Cherblanc, Marguerite; Frontenac.
Church, Mary L.; Pittsburg.
Clark, Frances Mary; Walnut.
Cleavinger, Hattie; Lowemont.
Cline, Elsie Lea; Fredonia.
Cline, John; McPherson.
Cline, Mrs. Rebecca; McPherson.
Conrad, Anna Marie; Pittsburg.
Cook, Ruby Lenore; Pittsburg.
Cooper, Winifred Anna Mae; Savonburg.
Corby, Elenor Mary; *Carthage, Mo.*
Corlett, Eva; *Joplin, Mo.*
Cote, May; Weir.
Cripe, Cora; McPherson.
Crook, Rozella Elizabeth; Independence.
Curran, Alice Theresa; Pittsburg.
Daugherty, Julia; Parsons.
Davis, Artie; Frontenac.
DeArmond, James Ray; Kanoplis.
Dean, Charles Wilbert; McPherson.
Denney, Julia; Independence.
Dienst, Eugene Stanley; Coffeyville.
Dienst, Wilhelmina; Coffeyville.
Dietrich, Susie Agnes; Mulberry.
Dillon, Olive; *Siloam Springs, Ark.*
Dixon, Emily Catherine; St. Paul.
Dobson, Lenore; Edna.
Dodson, Clara May; *Carthage, Mo.*
Doty, Charlotte; Pittsburg.
Doughman, Lisle L.; Mound Valley.
Dowling, Georgia A. Turrill; Weir.
Drake, Greta; Pittsburg.
Drake, Jennie; Iola.
Dunbar, Martha; Weir.
Dunn, Eupha LaVon; Girard.
Duvall, Nellie S.; West Mineral.
Ecton, Elizabeth Marie; Winfield.
Ellis, Vernon; Iola.
Ermey, Mrs. Gladys Cropper; Pittsburg.
Estes, Floyd Erven; Paola.
Ewalt, Veva Roberta; Great Bend.
Farrimond, Mildred; Pittsburg.
Fessimire, John R.; Rose Hill.
Fisher, Hilda; Frontenac.
Fitzgibbon, Marguerite Elizabeth; Oswego.
Flater, Mertie Estella; Hepler.
Flynn, Mae Constance; Pittsburg.
Foster, Jennie B.; Pittsburg.
Foster, Lena Rhea; *Joplin, Mo.*
Fowler, Rowena Jaunita; Iola.
Franklin, Alpha Vivian; Winfield.
Frasure, Urcil May; Fort Scott.
Freeman, Imogene La Von; Bronson.
Frendenberger, Bess Mae; Pittsburg.
Friend, Stella Arvilla; Pittsburg.
Fry, Bessie Emmily; *Asbury, Mo.*
Fugate, Mrs. Angeline Phillips; Oswego.
Fulkerson, Eula Lorene; Pittsburg.
Galpine, Joseph Henry; *Asbury, Mo.*
Gardner, Aville; Girard.
Gibbs, O. Ruth; Parsons.
Gilbreath, Gladys; Pittsburg.
Gilbert, Alva Richard; Pittsburg.
Godden, Isabel Lusina;* Caney.
Godsey, Viola Louise; *Collinsville, Okla.*
Goodhall, Charles Albert; Pittsburg.
Goodrum, Cecile; Pittsburg.
Graham, Mary Ellen; Pittsburg.
Haggard, Alta Louise; Oswego.
Hailey, Elsie Rosalba; Coffeyville.
Hamilton, Ethel Williams; Pittsburg.
Harley, Willa Irene; McCune.
Hatton, Ferda Hazel; Pittsburg.
Hayden, Zella Vera; Pittsburg.
Hayman, Abbie Ruth; *Van Buren, Ark.*
Hefley, Gertrude Lucile; Morehead.
Heidelburg, Mae; Pittsburg.
Helton, Georgia Archer; Galena.
Hemphill, Margaret Ellen; Chanute.
Henley, Eleanor; *Carthage, Mo.*
Henry, Leota Teresa; Independence.
Higgins, Mrs. Ella G.; Pittsburg.
Hoerner, Elizabeth H.; McPherson.
Holley, Prudence Minerva; Oswego.
Holmquist, Ellen Evelyn; Pittsburg.
Howard, Ivy Ruth; Cherryvale.
Humphrey, Shirley Virginia; Mound Valley.
Hunter, Alma; *Sherman, Tex.*
Hunter, Ann Clara; *Sherman, Tex.*
Hutchinson, Hallie Mae; Pittsburg.
Ingham, Anna Blanche; Fort Scott.
Ireland, Anita L.; Weir.
Iserman, Grace Hazel; Pittsburg.
Jackson, Jennie Bell; *Muskogee, Okla.*
Jackson, Jesse Walter; Olivet.
James, Eula Marie; Arcadia.
Janes, Pearl Daisy; Farlington.
Jewell, Nellie Rose; Fulton.
Johnson, Esther Walberg; Savonburg.
Johnson, Richard Melvin; Pittsburg.
Jolly, Waunita Ethel; Longton.
Jones, Lizzie; Frontenac.
Kauffman, Mary Grace; *Joplin, Mo.*
Keesling, Charles E.; Fredonia.
Kelce, Marie; Pittsburg.
Kelley, Prudie; Pittsburg.
Kelley, Verna Irene; Pittsburg.
Kennedy, Elizabeth Elzina; Opolis.
Kerr, Verna Faye; Pittsburg.
Kiefer, Julius Emory; Rosedale.

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* Deceased.

COLLEGE SOPHOMORES—CONTINUED.

King, Edith Julia; Pittsburg.
King, Mary Agnes; Pittsburg.
Knight, Corrinne Mae; Fort Scott.
Knotts, Mintie Thelma; Cherokee.
Koger, David Smith; Pittsburg.
Kohler, Kora Alma; Pittsburg.
Laird, Dorothy Helen; Frontena.
Lanyon, Helen Dorothy; Pittsburg.
Larrick, Flora La Vauche; Leon.
Leblicq, Carmen Viola; Pittsburg.
Leigh, Mary; Girard.
Leonard, Ruby Odell; Galena.
Lickteig, Sister M. Evangelista; Paola.
Ligon, Mrs. Ethel Bell; Pittsburg.
Limb, John R.; Pittsburg.
Liston, Myrtle; Altamont.
Litton, Glenn B.; Pittsburg.
Livermore, Carrie M.; *Joplin, Mo.*
Lockwood, Joseph E.; Kingman.
Loveless, William Franklin; *Webb City, Mo.*
Lowe, Lavon Mary; Pittsburg.
Lucke, Gladys Esther; Girard.
McBride, Pearl Blanche; Pittsburg.
McCall, La Verne Filson; Pittsburg.
McCallum, John; Pittsburg.
McClennahan, Margaret; Radley.
McCool, Laura Maude; Opolis.
McDonald, Cora; *Joplin, Mo.*
McFarland, Sister Colombierre, St. Paul.
McFerrin, Mary Grace; Independence.
McGoey, June Iona; Pittsburg.
McKinley, Noel G.; Pittsburg.
McKnight, Jessie Isabel; Cherryvale.
McLean, Margaret; Fort Scott.
Malleis, Edward Herman; Halstead.
Mason, Frances E.; Hepler.
Maudlin, Della R.; La Harpe.
Meils, Minnie Louise; South Haven.
Messersmith, Mrs. Luva Roberts; *Alliance, Neb.*
Michel, Elsie Lillian; Walnut.
Miller, Amy Maud; Columbus.
Miller, Julia Elizabeth; La Cygne.
Miller, Lena Marie; Pittsburg.
Miller, May; *Joplin, Mo.*
Miller, Merle; Savonburg.
Mitchell, Margaret Olive; Pittsburg.
Moody, Birdie Florence; Columbus.
Moore, Eleanor Loretta; *Joplin, Mo.*
Moore, Ethel Jessie; Fort Scott.
Moore, Sadie; Parsons.
Moss, Clara Almeda; Mount Hope.
Murphy, Ellen Delphine; Girard.
Murphy, Riley Harold; Great Bend.
Murray, Janet Mackie; Scammon.
Needham, Sadie Catherine; Arcadia.
Nesch, Kathryn Helen; Pittsburg.
Nevius, Katie Belle; Edna.
Nickell, William Anderson; *Joplin, Mo.*
Niles, Nettie; Kismet.
Norene, Ruth Sidney; Pittsburg.
Nystrom, Laura Christene; Columbus.
O'Conley, Mrs. Sue Marjory; Pittsburg.
O'Donnell, Margaret Teresia; Frontenac.
Oglesby, Mattie E.; *Siloam Springs, Ark.*
O'Hara, Kathryn Nora; Frontenac.
Oldham, Mary Elizabeth; Pittsburg.
Oldham, Ruth Catherine; Mulberry.
Oliver, Thomas William; Pittsburg.
Olson, Mrs. E. A.; Edna.
Pancost, Gladys Ava; Galva.
Parker, Lois Elizabeth; Independence.
Peterson, Ruby Ruth; Pittsburg.
Pettiner, Marjorie Irene; Coffeyville.
Phillips, Fern Field; Columbus.
Phillips, Lucile; *Joplin, Mo.*
Piper, Mrs. Beryl Hammer; Scammon.
Procter, Marvel M.; *Nevada, Mo.*
Price, Mrs. Grace Catherine; Coffeyville.
Puckett, Mildred Marguerite; Galena.
Quinn, Margaret F.; Scammon.
Redmond, Eleanor Alice; Walnut.
Reese, Julius C. V.; Cherokee.
Reeves, B. Pearl; Grenola.
Reynolds, Amy; Frontenac.
Ringle, Lloyd Clinton; Pittsburg.
Roach, Arno Lyle; Mulberry.
Robertson, Arepha Jaunita; Galena.
Robinson, Collier; *Fort Smith, Ark.*
Robinson, Howard Hardy; Washington.
Robinson, Leah Claire; Chanute.
Rodgers, Maytie A.; Pittsburg.
Roitz, Tillie Helen; Ringo.
Rose, Hanna Evelyn; Pittsburg.
Roseberry, Mabel Celeste; Erie.
Rumbaugh, Luella Florence; Pittsburg.
Rummel, Mabel Ella; Baxter Springs.
Rush, Floyd Harold; Girard
Saccane, Guido Herbert; Ringo
Schlichting, Ernest; Pittsburg.
Schwab, C. Archie; Pittsburg.
Schwab, Hester E.; Pittsburg
Scott, Florence Maye; Parsons.
Scott, Floyd Leroy; Greenleaf.
Sexton, Ruth Katherine; *Siloam Spgs., Ark.*
Seymour, Merrill Ellsworth; Pittsburg.
Sharp, Arnold Beatrice; Pittsburg.
Shaw, Josephine; La Cygne.
Shaw, Margaret; Girard.
Shead, L. Merle; Arcadia.
Sheffield, John Patterson; Arcadia.
Shelley, Clair William; Kansas City, Kan.
Shellhorn, Nina Josephine; Erie.
Shewalter, Ruth Mae; Pittsburg.
Sidwell, Ulla Buena; Pittsburg.
Slater, Irma; Pleasanton.
Smith, Edna Margaret; Galena.
Smith, Leta Elizabeth; Pittsburg.
Smith, Ruth Margaret; Chanute.
Smith, Ward Perry; *Carl Junction, Mo.*
Sneller, William Arthur; Rossville.
Snider, Alta; Savonburg.
Snider, Ruth Ellen; Savonburg.
Snyder, Mabel Ruth; La Cygne.
Spurgeon, Triston Lee Roy; Kan. City, Kan.
Starr, Grace Marjorie; Pittsburg.
Stevens, Lula Agnes; Weir.
Stevens, Mary D.; Fort Scott.
Stevens, Tempa L.; Ford.
Sturgeon, Hays B.; Eureka.
Sullivan, Frances Margaret; Pittsburg.
Sumpter, Mary Oliver; Delia.
Sutherland, Launce L.; Walnut.
Swanson, Esther Helen; Lawrence.
Sweeney, Isadore Mae; Pittsburg.
Taber, Mary Iris; Pittsburg.
Tabor, Ella Louise; Girard.
Taylor, Leona Irene; Dearing.
Taylor, Pearl Etta; Independence.
Thatcher, Blanche Mae; Great Bend.
Tilton, Ruth Elizabeth; Edna.
Tourtlot, Dale Francis; *Joplin, Mo.*
Townsend Sue; Girard.
Trible, Blanche Leona; Independence.
Ulrich, Elsa Elizabeth; Galena.
Usher, Mrs. Josephine Fern; Scammon.
Utz, Clara Belle;* Pittsburg.
Utz, Mary Agatha; Pittsburg.
Vawter, Adah Mary; Arkansas City.
Wacker, Ruby; Newton.
Walker, Edith Lottie; Galena.
Waltz, Geneva Madge; Pittsburg.
Ward, Lora Isabel; Geuda Springs.
Washington, Mrs. Marguerite Hotchkiss; Pittsburg.
Weems, Mary; *Sherman, Tex.*
Wheeler, Mae; Fredonia.
Whitaker, Alice Cleone; Pittsburg.

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* Deceased.

COLLEGE SOPHOMORES—CONCLUDED.

Whitaker, Flora Catherine; Pittsburg.
Whitaker, Gladys; Pittsburg.
White, Anna; Weir.
White, Kathleen Mary; Pleasanton.
White, Vera Wilnette; Uniontown.
Wilkins, Lora Mildred; Cherokee.
Williams, Delsie Elizabeth; *Hiddenite, N. C.*
Williams, J. Roumania; Independence.
Williams, Lena Frances; Coffeyville.
Williams, Lizzie N.; Peru.
Williams, Winnie G.; Arcadia.
Williamson, Mrs. Mary; Scammon.
Wilson, Ruth; Pittsburg.
Wimp, Marguerite; Pittsburg.
Wood, Bertha; Pittsburg.
Woodworth, Cora; Walnut.
Wootan, Mrs. Hallie; Opolis.
Wright, Faye Gladys; Weir.
Wright, Ruby Marie; Weir.
Zappa, Marie Frances; Weir.

COLLEGE FRESHMEN.

Abbey, Thelma Irene; Pleasanton.
Adams, Pamelia Anne; Moline
Adamson, Gladys Marie; Girard.
Akers, Bernice May; Chanute.
Alexander, Blanche; Garnett.
Alexander, La Von B.; Pittsburg.
Allan, Geanie; Mulberry.
Allen, Lillian Maude; Galena.
Alleger, Jewel; Galena.
Alley, May Alice; Toronto.
Allison, Naoma Vincit; Chanute
Allaman, John Orlo; Boicourt.
Allmon, Marie; Columbus.
Alspaugh, Georgia; Kinsley.
Ammel, Sister M. Carmela; St. Paul.
Anderson, Helen Rose; Thayer.
Arbuckle, Mortimer Marvin; *Quapaw, Okla.*
Archer, Ralph Harvey; Iola.
Archer, Viola Hazel; Galena.
Armstrong, Barbara; Pittsburg.
Armstrong, Nellie Olive; Hiattville.
Arnette, Wilda; Parsons.
Arnold, Faye B.; Winfield.
Asch, C. Edith; Fort Scott.
Aton, Rex; Oswego.
Austin, Leola May; Mulberry.
Autem, Ida; Cherokee.
Baker, Harriett, M.; Oswego,
Baker, Letha Lucile; Erie.
Baldridge, Marie; Weir.
Ball, Jessie Mildred; Independence.
Bammann, Lewise K. M.; Girard.
Barnes, Mrs. Anna Day; Colony.
Barnes, Blanche E.; Mound Valley.
Barnes, Charles F.; Colony.
Barnes, William Isaac Newton; Weir.
Barnett, Raymond Rogers; Winfield.
Barr, Edna; Cherokee.
Barrow, Frank; Weir.
Bassett, Blanche Stevann; Walnut.
Baty, Theresa Elizabeth; Independence.
Bauer, Erma Marie; *Joplin, Mo.*
Bauersfeld, Alma; Yates Center.
Baysinger, Julia; Iola.
Bean, Grace L.; Pittsburg.
Bear, Stella Esther; Abilene.
Beasley, Vera B.; *Wagoner, Okla.*
Beatty, Mabel Azella; Columbus.
Beckett, Rowena Marie; Garden City.
Beckman, Leslie Frank; Thayer.
Beiderwell, Mrs. Josephine; Edna.
Bell, Harry E.; Pittsburg.
Bell, Vera Victoria; Savonburg.
Bennett, Grace Margaret; Scammon.
Bennett, Mary Pauline; Pittsburg.
Bergstresser, Mabel Marie; La-Cygne.
Bertrand, Harriet Goldie; Cambridge.
Bevans, Dee; Mulberry.
Bicknell, Mrs. Blanche Storey; *Carl Junction, Mo.*
Billbe, Grant; Iola.
Bird, Lucy Marie; Girard.
Bivins, Mrs. Laura Hamilton; Fredonia.
Black, Ben Clayton; *Joplin, Mo.*
Blackburn, Evelyn Louise; Parsons.
Blackman, Belle; *Liberal, Mo.*
Blackman, Nellie Etta; Bronson.
Blackstun, Melvin Clyde; Neodesha.
Blaes, Sister Mary Florence; Pittsburg.
Blake, Violet Edythe; Weir.
Bock, Francis Anthony; *Pilot Grove, Mo.*
Boggs, Grace E.; Coffeyville.
Bogarty, Earl Leonard; *Minden Mines, Mo.*
Bollinger, Marie; Mound Valley.
Boone, Daniel; Colony.
Boone, Sister Alexander; St. Paul.
Boore, Mamie; McCune.
Borden, Lula Agnes; Girard.
Boulware, Rubye Belle; *Muskogee, Okla.*
Bowers, Janet; Galena.
Bowens, Adolph Burner; *Guthrie, Okla.*
Bowman, John William; Caney.
Bowman, Mildred Althea; Pawnee Rock.
Boyd, Arthur Gilmore; Moran.
Boyd, Gertrude; Galena.
Boyer, Neva Estes; Meade.
Bradbury, Consuelo Florence; Edna.
Braden, Gail Samuel; Humbolt.
Brannum, Nellie Inez; Atlanta.
Bredine, Edwin R.; Mound Valley.
Breivogel, Walter Arlow; Pittsburg.
Brisbin, Leona May; Scammon.
Britton, Gladys Amelia; Weir.
Broadus, Leola; Parsons.
Brock, Joe Nelson; Altamont.
Brock, Ruth Viva; La Harpe.
Brooks, Inza Emma; Chetopa.
Brooks, Robert Dale; Larned.
Brown, Dewey Wheeler; Dexter.
Brown, Ethel Zora; Havana.
Brown, Flosie Fay; Cherokee.
Brown, Ethel Ann; Bartlett.
Bruton, Lottie Marie; Pittsburg.
Bryant, Homer Layfette; Galena.
Buchanan, Edythe Wyona; Fort Scott.
Buchanan, Effie Dawn; *Morrison, Okla.*
Bucher, Martha E.; *Carthage, Mo.*
Buck, Willis Adelbert; Cherokee.
Buffalow, Anna; Cherokee.
Buford, Lucretia Julianna; Fort Scott.
Burge, Helen Louise; Pittsburg.
Burdick, Ora Mae; *Neosho, Mo.*
Burgess, Bernice Opal; Scammon.
Burris, Nellie Browning; Parsons.
Butcher, Avis; Garnett.
Butler, Mary; Walnut.
Byner, Ralph Mansfield; Altamont.
Callahan, James Micheal; Scammon.
Calvin, Shirley Mae; Rock.
Cameron, Cora Marie; Altamont.
Cameron, Lloyd C.; Caney.
Campbell, Elmo Lysle; Pittsburg.
Cann, Elizabeth Ann; Pittsburg.
Canfield, Theressa; Scammon.
Cannan, Nellie Grace; Erie.
Canny, Sylvia Simpson; Altamont.
Carlson, Mae Lena; Cherokee.
Carlton, Winifred; Walnut.
Carnagey, Thelma Josephine; La Cygne.
Carns, Nellie Myrtle; McCune.
Carpenter, Edmund Sinnott; Oswego.

COLLEGE FRESHMEN—CONTINUED.

Carr, Nora Anne; Parsons.
Carroll, Mary; Frontenac.
Carter, Cecile Wanda; Pittsburg.
Carter, Gladys Marie; Independence.
Carter, Lois Geneva; Independence.
Carter, Margarette Angeline; Pittsburg.
Carver, Sullie Blanche; Atlanta.
Casad, Josephine Mildred; Pittsburg.
Casey, Jessie Myrtle; McCune.
Cassell, George Wesley; Fort Scott.
Cavenee, Hazel Ruth; Cedarvale.
Chadsey, William Lloyd; Cherokee.
Chambers, Cecil G.; Hepler.
Chase, Alice Corbett; Wichita.
Chase, Hubert Banks; Pittsburg.
Chenoweth, Etta Belle; Mapleton.
Chickadonz, Clara H.; Chanute.
Child, Clara; Kingman.
Chitwood, A. Marie; Conway Springs.
Christmore, Enid Amelia; Edna.
Churchill, Frances M.; Columbus.
Clarahan, Sister M. Ambrow; Pittsburg.
Clark, Laura Viola; Chetopa.
Clark, Margaret; Mulberry.
Clark, Raymond Dean; Ottawa.
Clarke, Millicent Pearl; Pittsburg.
Cleavinger, Bettie; Lowemont.
Cleavinger, Sarah Jane; Lowemont.
Clemens, Mary Mabel; Pittsburg.
Cline, Bertha Catherine; Columbus.
Clouse, Alpha Rachel; Stark.
Cloyd, Mary Edith; Pittsburg.
Cobb, Martha Gertrude; Holcomb.
Cochran, Riley M.; Bethany.
Cockerill, Hazel F.; Pittsburg.
Coleman, Arthur Garfield; Sterling.
Colburn, Marie Martha; McCune.
Coles, Winifred Alene; *Joplin, Mo.*
Comer, Florence Catherine; Kimball.
Comer, Ruth; Pittsburg.
Conboy, Florence; *Joplin, Mo.*
Conklin, Inez; *Asbury, Mo.*
Conklin, Ruth Lily; *Asbury, Mo.*
Conner, Edna Florine; Oswego.
Conrad, Ben K.; Pittsburg.
Conrad, Eddie Marion; Pittsburg.
Conwell, Vera Ione; Topeka.
Cook, Jaunita Beatrice; Pittsburg.
Cook, Nellie Faye; *Jasper, Mo.*
Cook, Hazel Russell; Cherokee.
Cooper, Charlotte L.; Osawatomie.
Cope, Ruth D.; Independence.
Copeland, Hattie May; Arcadia.
Copenhaver, Daphen Dee; McCune.
Copenhaver, Jesse Ray; McCune.
Cornell, Rhoda Elizabeth; Edna.
Cornish, Hester Mae; Neosho.
Costello, Anna D.; Pittsburg.
Courtney, Iona Faye;* Savonburg.
Cox, Dorothy Leona; La Cygne.
Cox, Olive Etta; Elsmore.
Crall, Earl Henry; Parsons.
Crawford, Dore; Girard.
Croft, Mrs. Lena Gladys; Fort Scott.
Crosswhite, Albert Edmund; Parke.
Crow, Agnes; *Carthage, Mo.*
Cumiskey, Edwin Frank; Pittsburg.
Cummings, Hazel B.; Erie.
Dale, Lois Inez; Parsons.
Daniels, Helen Eloise; *Catlettsburg, Ky.*
Daniels, Mrs. Mae Houser; La Harpe.
Darling, Xina Blanche, Mound Valley.
Davidson, Alda; Girard.
Davidson, Ethel; Chanute.
Davidson, Harold; Mulberry.
Davidson, Joseph Leonard; Peru.
Davidson, Lallah Sherman; Elk City.
Davis, Edna Elizabeth; Longton.
Davis, Faye; Altoona.
Davis, Irma S.; Pittsburg.
Davison, Mrs. Christie Eva; Mulberry.
Daxon, Alice Mardell; Parsons.
De Armon, Alice Irene; Parsons.
Delanders, Reuben John; Kinsley.
De Long, Earl Dyer; Chautauqua.
Dennis, Amy Frances; McCune.
Dennis, Grace Lenore; Parsons.
Dennis, Genevieve Alice; Olathe.
Derby, William Patrick; Frontenac.
Devinney, Verdie Katherine; Edna.
Devlin, Agnes Christina; Scammon.
Dewar, Cyrus T.; *Kansas City, Mo.*
Dewhirst, Mabel N.; Farlington.
Dewhirst, Nina Esther; Farlington.
Diamond, Charles Allen; Columbus.
Dicker, Mary Alice; Lawrence.
Dickerson, Orra; Dearing.
Ditson, Jessie Anna; Galena.
Dixon, Sister Mary Felicitas; Pittsburg.
Dolan, Ellen Mae; Pittsburg.
Dolson, Robert Hugh; *Joplin, Mo.*
Donahue, Agnes F.; St. Paul.
Dorsey, Arthur Milton; Weir.
Dorsey, Winifred C.; *Siloam Springs, Ark.*
Doty, Jack; Pittsburg.
Drew, Joesph Ellsworth; Pittsburg.
Dugger, Clara May; Columbus.
Dugger, Faye Hazel; Columbus.
Duke, John K.; Pittsburg.
Dunbar, Robert; Weir.
Dunlap, Ferdinand Guy; Neodesha.
Dunlavy, Edith May; Independence.
Dunton, David Hugh; Iola.
Dyer, Rowena Opal; Pittsburg.
Early, Irvin; Mulberry.
Eaton, Charles Henry; Weir.
Ecord, Estell Benjamin; Chanute.
Edwards, Ira Paul; Neodesha.
Edwards, Jessie Norvelle; Caney.
Edwards, Robert Lee; Garden City.
Eisenhart, Beatrice Eleanor; Franklin
Eisenhart, Vera Marie; Scammon.
Elder, Clyde Harold; Columbus.
Eldridge, Everett Ernest; Erie.
Ellington, Ethel May; Independence.
Elliott, Pearl Ellen; Savonburg.
End, Josephine Pauline; Fort Scott.
Engleman, Christine Imogene; Pittsburg.
Epley, Eva Mae; Beulah.
Epperson, Geneva Ellen; Pittsburg.
Evans, Mozella Gladys; Independence.
Evans, Myril Ann; Independence.
Evans, William Edward; Mulberry.
Fairman, Evelyn Marie; Altamont.
Farris, Jesse Sangster; *Joplin, Mo.*
Feemster, Clara; Fulton.
Felty, Floyd Cecil; *Liberal, Mo.*
Ferguson, Minta Marie; Pittsburg.
Fern, Mary Catherine; Scammon.
Ferns, Ada Margaret; Scammon.
Ferpotto, Edith; Frontenac.
Filkel, Ira Loyd; Pittsburg.
Finley, Glenn O.; Fort Scott.
Fischer, Joe Christopher; Wichita.
Fields, Raymond E.; Fort Scott.
Fieser, Clara Lydia; Harper.
Finical, Gertrude L.; Girard.
Fithian, James Allen; Baxter.
Fletchall, Lee Everett; Sabetha.
Ford, Blanch Lorene; Chanute.
Foreman, Vivian Alberta; Cherokee.
Forrester, Hazel Louise; Girard.
Foster, Glenn Ammerman; Iola.
Foster, Marguerite Mary; Morehead.
Fought, Olive Duetta; Erie.
Foulk, Ruth Helena; Calista.

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* Deceased.

COLLEGE FRESHMEN—CONTINUED.

Fowler, Russell N.; El Dorado.
Fowler, Sadie Maurine; Kingman.
Francis, Murn Evelyn; Frontenac.
Francisco, Winifred; Oswego.
Franklin, Norma; *Guthrie, Okla.*
Frazier, Marion; Girard.
French, Anna Catharine; Pittsburg.
French, Bertha Ruth; Pittsburg.
Frendenberger, Ruth; *Pettis, Mo.*
Freeburg, Homer; McCune.
Friend, John Willis; Wellington.
Frisch, Jacob Joseph; Westphalia.
Fuller, Dorthea Hamilton; Girard.
Funk, Leslie Orville; Thayer.
Gallet, Ethel Josephine; Pittsburg.
Gallet, Marie Edith; Pittsburg.
Galli, Mary Ernestine; Breezy Hill.
Gardner, Margaret Ellsworth; Pittsburg.
Garnand, Ivan D.; Garden City.
Gaw, Lena Beam; Independence.
Geckeler, Lewis Samuel; Independence.
Geier, Carl Edmund; *Joplin, Mo.*
Gilbert, Grace Marie; McCune.
Gilmore, Dora Pearl; Buffalo.
Gilmour, Robert Montgomery; Pittsburg.
Glidewell, Forest; *Liberal Mo.*
Goins, Ethel Claradark; Fort Scott.
Goodpasture, Lola Ethel; Columbus.
Gossett, Serena May; Girard.
Graham, Gladys Emma; Columbus.
Graham, Ines Estella; Pittsburg.
Grandle, Alfred Willis; McCune.
Grant, Clara Loretta; Scammon.
Grant, Elizabeth; Scammon.
Grant, Sarah Agatha; Scammon.
Grant, Thomas Hale; Altamont.
Grant, Wren Ward; Oswego.
Grantt, Celestine A. R.; *Muskogee, Okla.*
Gray, Helen Maria; Tyro.
Green, Finis McGrady; Moline.
Green, Mrs. Kenneth C.; *Minden Mines. Mo.*
Green, Irma Manilla; Roseland.
Greene, Kathleen L.; Longton.
Greenfield, Robert Aaron; McCune.
Gregg, Helen Sarah; Pittsburg.
Gregg, Helen Corinne; McCune.
Griffis, Marian Catherine; *Alpine Pass, Ark.*
Griffith, Vera Marie; Bronson.
Grimes, Minnie Seymour; Pittsburg.
Gude, Katherine Mae; Weir.
Guess, Willie May; Coffeyville.
Gunsaullus, Edna May; Fort Scott.
Hackelman, Freddie Earl; Chetopa.
Hadlock, Edith Ermine; Cherokee.
Hagar, Sister Joachim; St. Paul.
Hall, Clement Ernest; Columbus.
Hall, Ida Mildred; Rose Hill.
Hall, Mattie Loree; McCune.
Hall, Rosa Manilla; Pittsburg.
Halliday, Mary Jane; Mulberry.
Hale, Jane Charlotte; Topeka.
Ham, Norval Alfred; Cedar Vale.
Hamilton, Opal Marguerite; Independence.
Harley, Laverne W.; Fort Scott.
Harmon, Ismay Caroline; Arcadia.
Harries, Electra Thurza; Garden City.
Harryman, Guy Franklin; Hepler.
Hartley, Marie; Pittsburg.
Harwood, Olive Mae; Atchison.
Hass, Virgil Sherman; Lyons.
Hatten, Ruth Frances; Westphalia.
Hauser, Winifred Harriet; Wichita.
Haynes, Vivian D.; La Cygne.
Heath, Viola May; Pittsburg.
Heckethorn, Lester Oman; McPherson.
Hedges, Mildred; Galena.
Hedges, Rachelle Sallie; Elk City.
Heinlein, Michael Sebastian; Frontenec.
Helt, Carrie Mae; Winfield.
Henderson, Mrs. Lorena L.; *Joplin, Mo.*
Hendrickson, Aino Elmo; Mulberry.
Herrick, Donald Myron; Hutchinson.
Heryford, Myrtle; McCune.
Heskett, Hazel Serena; Girard.
Hickman, Hazel Clifton; Pittsburg.
Hickman, Byrl B.; Columbus.
Hill, Anna Eugene; Independence.
Hill, Harold De Witt; Ottawa.
Hill, James D.; Walnut.
Hill, Anna Florence; *Drexel, Mo.*
Hillegas, Matilda C.; Chetopa.
Hinkle, Carl Damon; Caney.
Hinkle, Ernest Ralph; Peru.
Hittle, Beulah Alida; Mayetta.
Hobbs, Alpha Herrick; Weir.
Hobson, Vera Inez; Pittsburg.
Hodges, Francis Leonard; *Carthage, Mo.*
Hohner, Carl David; St. John.
Hohner, Leonard Benton; St. John.
Holman, Harry Eugene; Mulberry.
Holt, Floyd Milford; *Smithfield, Mo.*
Hood, Mary; Winfield.
Hood, Will Archibald; Pittsburg.
Hoover, Bryan Ralph; Neodesha.
Hoover, Lola; Mt. Hope.
Hoppes, Ruth V.; Mulberry.
Hord, Hattie Poyntz, Colony.
Horn, Lewis Gerald; Wichita.
Houdashelt, Henry Asbury; Walnut.
Hudiburg, Leo E.; Independence.
Hudson, Elva Isabelle; Arma.
Hudson, Faye Lola; Arma.
Huff, Emma; Savonburg.
Hufford, Emma Flory; Severy.
Hughes, Horace Sumner; Coffeyville.
Humphrey, Lester Norman; Mulberry.
Hunker, Reith Dorothy; Fort Scott.
Hunsaker, Hazel Irene; Arma.
Hurd, Dolly Mae; Pittsburg.
Husted, Orval Chester; Norton.
Hutchinson, Nora Marie; Mulberry.
Hyde, Bertha May; Altoona.
Hyde, Sarah Belle; Altoona.
Jaccard, Carrie; *Webb City, Mo.*
Jack, Pearl Irma; Wichita.
Jackson, Dala; Columbus.
Jackson, Laura Elizabeth; Elsmore.
Jacobs, Anna Alice; McCune.
James, Mildred Leo; Jewell.
James, Bessie Ellen; Pittsburg.
Jarrell, Geneva Elaine; Pittsburg.
Jarrett, John William; Galena.
Jarrett, Lester Murray; Baxter Springs.
Jarrett, Walter Ellwood; *Joplin, Mo.*
Jeffers, Sherman Edmo;* *Baylis, Ill.*
Jelf, Otto Francis; Cedar Vale.
Jelf, Ozzo Hardin; Cedar Vale.
Jenkins, Evelyn; Scammon.
Jenkins, Harry Earle; Mulberry.
Jennings, Irene Adelaide G.; Girard.
Jessup, Dessa M.; McCune.
Jewell, Helen C.; Fulton.
Johnson, Nelse Homer; Savonburg.
Johnston, George El Dorado; Peru.
Joiner, Ruth Victoria; Columbus.
Jones, Cecil Le Roy; Moline.
Jones, Simon Wilham; Hutchinson.
Kannarr, Bessie Edith; Topeka.
Kappelman, Henry Frank; Clay Center.
Karn, Retta Mae; Angola.
Kautz, Edith Mary; Girard.
Kaylor, Dolly Mae; Mulberry.
Kays, Leonard William; Cherokee.
Keating, Thomas Edward; Fulton.

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* Deceased.

COLLEGE FRESHMEN—CONTINUED.

Keener, Ida; McCune.
Keller, Mary Louise; Girard.
Kelley, Floyd Neoma; Iola.
Kelley, Harold Ray; Iola.
Kelley, Isabel Mary; Pittsburg.
Kelly, Regina Ann; Frontenac.
Kennedy, John Douglas; Fulton.
Kennedy, Ruth Marguerite; Girard.
Kennedy, William Scott; Mulberry.
Kensinger, Harleigh Bernard; Walnut.
Kerwood, Ira Frederick; Walnut.
Ketchum, Blanche; Galena.
Kitterman, Harley Clinton; Iola.
Kiesel, Edna Annette; Rosedale.
Kilduff, James Leo; Weir.
Kimbrough, Glenn Cecil; Chanute.
Kimmey, Reevel Ruth; Erie.
King, Callie M.; Pittsburg.
King, Charles Ernest; *Kingfisher, Okla.*
Kirk, Dora; Parsons.
Klenn, Julia M.; *De Soto, Mo.*
Knotts, Zelda R.; Cherokee.
Knowlton, Bertha Frances; Randall.
Knowlton, Ethel May; Randall.
Koontz, James Leon; *Joplin, Mo.*
Krohn, Mary; Pittsburg.
Kutz, Ruth; Parsons.
Kyger, Ada Mabel; McCune.
Kyser, Charles Raymond; Pittsburg.
Lackey, Prentice Caldwell; *Watts, Okla.*
Laing, Bry Herbert; Cherokee.
Laizure, Adah Lavina; Columbus.
Laizure, Floyd Anderson; Columbus.
Lakin, Gladys Hazel; Mulberry.
Lampton, Walter Deane; Cherokee.
Landreth, Orville Leslie; Oswego.
Lane, James Alfred; *Bartlesville, Okla.*
Lane, William; Coffeyville.
Langford, Lena Marie; La Cygne.
Lathrop, Myrtle Lorena; Scammon.
Laughlin, Reith Mae; Pittsburg.
Laughlin, Nettie B.; *Drexel, Mo.*
Layden, Pearl Lavon; Frontenac.
Layton, Matie Colene; Chetopa.
Lee, Edith Mary; Galena.
Lee, Mrs. Eleanor Lavina; Parsons.
Leisure, Brady; *Carl Junction, Mo.*
Lemert, Merl Locke; Cedar Vale.
Lemles, Lillian Marie; Girard.
Lemon, Robert Sheldon; Pittsburg.
Lenski, Joe August; Pittsburg.
Lenox, Sarah Emma; Galena.
Leonard, Beulah M.; Galena.
Leonard, Ernest Harold; Cedar Vale.
Leonard, Helen Louise; Parsons.
Lewis, Liza Ruth; Pittsburg.
Liggett, Nellie Vinita; *Joplin, Mo.*
Limb, Emma Irene; Pittsburg.
Limity, Katie Marie; Chicopee.
Lindburg, Linda Maria; Osage City.
Lindsey, Nellie Mae; Cherokee.
Lockwood, Chester Alfred; Mound City.
Long, Jean Edna; Wichita.
Long, Laura; Oxford.
Long, Ruth Elmina; *Woodword, Okla.*
Loskot, Bessie Pauline: Caldwell.
Loth, Birdie Ewell; Iola.
Lowe, Fannie A.; Coffeyville.
Lozier, Alma Leah; Edna.
Lozier, Thomas Loyd; Edna.
Lucke, Jessie Elizabeth; Girard.
Ludlow, James Herbert; Pittsburg.
McAlexander, Besse Frances; Ashland.
McAnnally, Rena; Pittsburg.
McCall, Wilma Mary; Caney.
McCabe, Claude Ezra; Coffeyville.
McCann, Ora Emanuel; Sedan.
McCartney, Sylvia Hadley; Arkansas City.
McCarty, Margaret Maria; Coffeyville.
McCaskill, Agnes Ruby; Pittsburg.
McCasland, Hope Vandeth; Ashland.
McClain, Grace; Kingman.
McCool, William Dana; Opolis.
McCormick, Lucile; Chicopee.
McCormick, Partick Carl; Pittsburg.
McCrory, Martha Jane; Mayetta.
McCune, George; Chanute.
McCurry, Leona Bell; Peru.
McCurry, Ruth; Peru.
McDonnell, Bernice Helen; La Cygne.
McFarland, Ernest H.; Caney.
McGhie, Mildred Pauline; Columbus.
McGinnis, Sister Francis Xavier, St. Paul.
McGonigle, Zoe Dore; Pittsburg.
McIlwain, Athlyn Conover; Hoisington.
McKee, Earl Henry; *Guthrie, Okla.*
McKee, Gladys Virginia; Girard.
McKinnon, Helen Frances; *Siloam Springs, Ark.*
McMurray, Blanche Irene; Latham.
McWilliams, Kenneth Ryburn; Girard.
Magee, Dayton William; Independence.
Magoon, Oscar Clinton; *Carl Jct., Mo.*
Mahan, Hazel; Pittsburg.
Mandeville, May Nina; Kingman.
Mannoni, Socrates Alfouse; Frontenac.
Mantooth, Frank B.; Sedan.
Marchbanks, Eva; Mulberry.
Marks, Maude Hazel; Kimball.
Marshall, Irene Mason; Winfield.
Martin, Ada Pearl; Chanute.
Martin, Edna Mae; *Minden Mines, Mo.*
Martin, Hazel Shapley; *Lamar, Mo.*
Martinson, Merriel Leon; Arcadia.
Martyn, Mary Olive; Pittsburg.
Mason, Carrie; Pittsburg.
Mason, Thomas Eldon, Fort Scott.
Masterson, Columbia May; Fort Scott.
Matthews, Robley; Pittsburg.
Matthews, William Henry; Pittsburg.
Mayberry, Edith; Coffeyville.
Mayfield, Antha Beatrice; Conway Springs.
Maynard, Robert Harry; Sabetha.
Mead, Ralph Merle; Dexter.
Means, Gertrude Marjorie; Chanute.
Meek, Bernice Lee; Duquoine.
Meeker, Gwynne Emerson; Wichita.
Meeker, Ina Ruth; Wichita.
Megonigle, Electa; Elk City.
Meliza, Dorothy Athol; La Harpe.
Meliza, Olive Belle; La Harpe.
Mendenhall, Clarence James; La Cygne.
Mendenhall, Mary Margeret; La Cygne.
Mendenhall, Roscoe Lee; Chanute.
Menichetti, Americus; Frontenac.
Meredith, Myrtle Lena; Chanute.
Mertins, Helen Blanche; *Carthage, Mo.*
Messenger, Charlotte Helen; Galena.
Mezel, Josye Maude; Mulberry.
Mezel, Mabel Clara; Mulberry.
Miller, Emma Delila; Galena.
Miller, Mrs. Olga Appleman, *Carl Jct., Mo.*
Miller, Orrin Justice; Galena.
Miller, Treva Margaret; Independence.
Minshall, Hazelton; Baxter Springs.
Mishler, Nina Fern; Galena.
Mitchell, Mary; Cherokee.
Mitchell, Raymond Ernest; *Gentry, Ark.*
Moffatt, John Warren; Pittsburg.
Moherman, Laura Fox; Wellsville.
Mohler, James Monroe; *Liberal, Mo.*
Molohan, Irene; Parsons.
Moniot, Frances Leone, *Henrietta, Okla.*
Montee, Hazel Marie; Pittsburg.
Montgomery, Luella Jane; La Harpe.
Moody, Rozella ;Fort Scott.
Moore, Albert Harrison; Altamont.
Moore, Gladys Anna; Valeda.
Moore, Jewell B.; Erie.

COLLEGE FRESHMEN—CONTINUED.

Morgan, Aletha Mae; Monmouth.
Morgan, Eunice Ethel; Frontenac.
Morrell, Florence Helen; Fulton.
Morris, Mary; Frontenac.
Morrison, Eloda George; Chetopa.
Mortimer, Dott G.; Cherryvale.
Morton, Wilford Elmer; Chanute.
Moyer, Floyd Huber; Columbus.
Mueller, Truman Paul; Wichita.
Muir, Irma Irene; Caney.
Mullikin, Earl John; Pittsburg.
Mullikin, Ida Caroline; Cherryvale.
Murphy, Daisy Phyrne; Bartlett.
Myers, Ruby Josephine; Pittsburg.
Neal, Vessie Anna; Garden City.
Neher, Edna Esther; McCune.
Neibarger, Clyde Benjamin; Topeka.
Nelson, Gladys Corrine; Stark.
Nelson, Harry Vivian; Pittsburg.
Nelson, Mary Brumback; Pittsburg.
Newton, Ober Max; *Minden Mines, Mo.*
Nicholson, Denman R.; Girard.
Nicholson, E. Pearle; McCune.
Nicholson, Mabel Marie; McCune.
Nickels, Elmer Maynard; Colony.
Nibarger, Jessie C.; Arcadia.
Norwood, Aurora; *Carthage, Mo.*
Norwood, Warren Ross; St. John.
Oberwortmann, Mabel Marie; Chetopa.
O'Bryan, Iola; Girard.
O'Dell, Clyde Herman; *Ashbury, Mo.*
Oldham, Georgia Anna; Mulberry.
Oliphant, Jane M. Read; Wichita.
Oliver, Ella Thelma; Pittsburg.
Olson, Glenn Earl; Galesburg.
Orr, Frederick Lyford; Peru.
Otis, Mrs. Margaret McCandless; Holton.
Ott, John Lewis; Kinsley.
Overdyke, Nett Kathryn; Cherokee.
Owens, Addison Dimmit; Parsons.
Padget, Alice Ruth; Redfield.
Page, Velma Maxine; Cherokee.
Parker, Ralph Alonzo; Erie.
Parsons, Harlan Huston; Savonburg.
Paslay, Mrs. Mabel Louise; Frontenac.
Patrick, Boyd Middleton; Columbus.
Pellett, Myrtle E.; Fort Scott.
Penney, Eunice Manila; Altamont.
Perdue, Edith Belle; Opolis.
Perkins, Gladys Anna; *Minden Mines, Mo.*
Perrine, Vivian Pauline, *Siloam Springs, Ark.*
Perry, Raymond Alfred; Stillwell.
Pettiner, Esther Myrtle; Coffeyville.
Phillips, Edith May; Girard.
Phillips, Harvey Gordon, *Minden Mines, Mo.*
Phillips, Lucinda Jane; Mulberry.
Phillips, Margaret Hannah; Hutchinson.
Pickering, Eva Pauline; Galena.
Pickerill, Orville Alfred; Geneseo.
Pierce, Evelyn Winifred; Redfield.
Pitts, Ada Mae; Fort Scott.
Plagens, Hertha Maurine; Pittsburg.
Plum, Lucia Ann; Walnut.
Pomeroy, Roy L.; Elk City.
Post, Della Leah; Mound City.
Pottenger, John R.; Pittsburg.
Potter, Harold D.; Fort Scott.
Potter, Pauline Lavone; Pittsburg.
Poulson, E. Loral; Chetopa.
Powell, Rosalynd; Osage City.
Preston, Leana Alice; Agricola.
Price, Mary; Girard.
Provan, Margaret May; Farlington.
Provan, Mattie Margarita; Farlington.
Pucci, Zeno Joseph; *Kansas City, Mo.*
Pritchett, Mabel Edna; Pittsburg.
Pugh, Virgil; Erie.
Pulliam, Colin Locke; *Watts, Okla.*
Pulliam, Loren Reid; *Watts, Okla.*
Puls, Katie; Attica.
Purdy, Marie; Chanute.
Pyle, Leo Deets; Farlington.
Rahm, Hazel Elaine; *Bartlesville, Okla.*
Rambo, Fern; Mulberry.
Ramey, Maude E.; Spring Hill.
Ramey, Ruth Grace; Spring Hill.
Randall, Addie Marie; *Grandview, Ill.*
Rankin, Thomas; Pittsburg.
Rauch, Dewey Ferris; Galena.
Ray, Jesse Blynn; Cherryvale.
Reasor, Mrs. Stella; Pittsburg.
Reddins, Anna Belle; Independence.
Reed, Bessie Velma; Girard.
Reed, Olive M.; *Liberal, Mo.*
Reedy, Leta Mae; Bartlett.
Reid, Laura Gene; Scammon.
Reilly, William Patrick; Chanute.
Reiter, Harley Lee; Beloit.
Renfrew, Edith Lillian; Woodward.
Reno, Marian Alfred; Scammon.
Reynolds, Ernest W.; Fort Scott.
Rhoads, Floyd Lynn; Columbus.
Richards, Chester Lewis; Kan. City, Kan.
Richards, Louisa Elizabeth; Pittsburg.
Rickey, Lillian; Mulberry.
Rickman, Faye; *Carl Junction, Mo.*
Rickman, Nell; *Carl Junction, Mo.*
Rickner, Mazie McKee: Galena.
Riker, Earl George; Columbus.
Rinker, Dottie; Liberty.
Ringle, Howard Jewett; Independence.
Riordan, Bridget Mary; Pittsburg.
Roach, George Edward; Winfield.
Roberts, Eva Marguerite; Girard.
Robertson, Daisy E.; Fort Scott.
Roberson, Daisy E.; Fort Scott.
Robinson, Ethel; Columbus.
Robison, Arthur Ward; Chetopa.
Rogers, Mary Evelyn; Lewisburg.
Rogers, Rose Sybil; Pittsburg.
Rogers, Vivian Claire; Pittsburg.
Rondelli, John; Chicopee.
Roseberry, Minnie Loretta; Erie.
Ross, Elizabeth; Pittsburg.
Ross, Ethel Caselman; Winfield.
Ross, Ethel Grace; Winfield.
Ross, Julia Irene; Oswego.
Ross, Pearl Oletta; Winfield.
Rouse, Clyde Spaulding; Chetopa.
Rouze, Vance Clark; Altamont.
Roweth, Olive; Redfield.
Rumbeck, Docia Edna; Savonburg.
Rumbley, Olive Mae; Chanute.
Runkle, Alma Melvina; Hiattville.
Russell, Mabel E. Alice; Cherokee.
Russel, Marguerite Alberta; Pittsburg.
Russum, Cuba Jane; Erie.
Ryan, Dennis Owen; Galena.
Ryan, Mary Evelyn; Mineral.
Ryan, Richard Morgan; Pittsburg.
Sackett, Elsie May; *Liberal, Mo.*
Sadler, Sylvia Clair; Randall.
Samp, Ellen May; McCune.
Sare, Nida Nalda; Erie.
Schaffner, Hazel Marie; Olathe.
Schaubel, Le Roy Herbert: Clay Center.
Schirard, Arthur; Mulberry.
Schmidt, Elizabeth; Oswego.
Schneider, Hallie Marie; *Ashbury, Mo.*
Schryver, Samuel K. M.; Erie.
Schwab, John William; Pittsburg;
Scott, Alexander; Colony.
Scott, Elsie Mary; Weir.
Scott, Everet Ernest; Weir.
Scott, George Olin; Colony.
Scott, Georgia Vivian; Galena.
Scott, Lewis William; Parsons.
Scott, Mildreth Bernice; *Jasper, Mo.*

COLLEGE FRESHMEN—CONTINUED.

Self, Verna Ray; Independence.
Seymour, Esther; Columbus;
Seymour, Harold; Pittsburg.
Seymour, Kathleen; Mound City.
Shannon, Gladys Amelia; Rose.
Sheffield, Elva Viola; Arcadia.
Shidler, Ralph Jessup; Girard.
Shiffler, Avery Oliver; Pittsburg.
Shobe, James Edison; Chautauqua.
Shoemaker, Mrs. Maude Marie Brighton, Independence.
Short, Willard Samuel; Ottawa.
Shreffler, Boyd La Verne; Topeka.
Shukus, Burton Twiss, Independence.
Sifers, Samuel Iba; Iola;
Simmons, Clement Francis; Hutchinson.
Simmons, Rosa; Fort Scott.
Simone, James; Weir.
Sinclear, Georgia Florence; Walnut.
Shelton, Evelyn Gertrude; Pittsburg.
Smalley, Helen Jane; Horton.
Smallwood, Leona Curtis; Emporia.
Smiley, Lydia Wilmoth; Pittsburg.
Smiley, Maggie Anna; Pittsburg.
Smith, Donovan Wise; Parsons.
Smith, Dorothy Kathryn; Girard.
Smith, Edith Mae; Pittsburg.
Smith, Ethelma Mary; Pittsburg.
Smith, Eva Marie; *Liberal, Mo.*
Smith, Georgia Lee; Girard.
Smith, Glenn F.; Girard.
Smith, Harry E; Pittsburg.
Smith, Mrs. Helene Edmunds; Chetopa;
Smith, James William; *Carl Junction, Mo.*
Smith, Lillie Luella; Columbus.
Smith, Rex; Pittsburg.
Smock, Leanna Jewell; Galena.
Snodgrass, Robert Richard; Franklin.
Snyder, Harold Allen; Iola.
Snyder, Inez; Parsons.
Soran, Sister Rose Theresa; St. Paul.
Souders, Carvel Olson; Eureka.
Spaid, Harold Bruce; *Joplin, Mo.*
Sparks, Joseph Wesley; *Joplin, Mo.*
Spence, Leota; Pittsburg.
Spencer, Harold Hughes; Pittsburg.
Sprague, Marie; *Carl Junction, Mo.*
Sprecher, Winifred Marie; Coffeyville.
Sprenger, Alice M.; St. Paul.
Spriggs, Hazel Eunice; McCune.
Stapp, Mrs. F. H.; Pittsburg.
Starrett, Leonard LaFayette; Columbus.
Stallard, Alberta; Caney.
Starchich, Grace Marion;* Fort Scott.
Stark, Ida Luella; Fall River.
Stephenson, Wess Harold; Galena.
Stewart, Cecil Leroy; Winfield.
Stone, George Fenton; *Caddo, Okla.*
Storey, John Robson; *Carl Junction, Mo.*
Stoskopf, Opal Nadine; Baxter Springs.
Stough, Winona Davies; Cherokee.
Stratford, Clark Oliver; Eldorado.
Streeter, Ethel Berle; Fort Scott.
Strohwig, Pearl M.; Holton.
Strope, Sadie Ann; Chanute.
Stump, Lillian O.; Columbus.
Sullivan, Albert K.; Parker.
Sullivan, Fern Lucile; Oswego.
Sullivan, Sister M. Callista; Pittsburg.
Sammer, Mrs. Ella Marie; Galena.
Sutcliffe, Blanche Laoma; Altoona.
Swain, Viola May; Iola.
Swart, Charles Everet; Eldorado.
Swartz, Helen Irene; *Walker, Mo.*
Swartz, Mata Mary; Galena.
Swearingen, Alba; Independence.
Swearingen, Ruth; Independence.
Swigart, Leta Oral; Girard.
Symes, Mildred Lois; Mulberry.
Talbot, Fern; Erie.
Tanner, Mabel Elma; Cherryvale.
Tanner, Myron Thomas; Cherryvale.
Tanquary, Jennie Esther; Girard.
Tate, Nina; Coffeyville.
Taylor, Horace Elmer; Cherokee.
Teeple, Buford; Walnut.
Tessmer, Wilhelmina; Pittsburg.
Tewell, Warren Buxton; Fort Scott.
Thompson, Charles Jasper; Walton.
Thompson, Grover Dellison; Parker.
Thompson, Stella Catherine; Pittsburg.
Thompson, Jessie Lee; Parker.
Thompson, Lenore; Pittsburg.
Thomson, Ethel Mary; Girard.
Thorp, Burnham C.; *Nevada, Mo.*
Timberlake, Harvey Arnold; Quenemo.
Todd, Marie Inez; Independence.
Toft, Vivienne; Pittsburg.
Tolle, Moree F.; La Harpe.
Tompkins, Albert James; *Glasgow, Mo.*
Torbett, Elizabeth Veronica; Arma.
Torrance, Mary; Independence.
Tout, Chester I. Long; Cedarvale.
Townsend, Lena Elsie; Girard.
Toy, Laura Elizabeth; Cherryvale.
Trabue, Tunnel Benjamin; McCune.
Traylor, Flora Elizabeth; McCune.
Trogdon, Alta; Arcadia.
Trudgeon, Mary Ellen; West Mineral.
Trueblood, Julia Mae; Yates Center.
Tucker, Augusta May; Girard.
Tuerk, Mollie C.; *Joplin, Mo.*
Turley, Goldie B.; Angola.
Turner, Chester C.; Eldorado.
Turrill, Coral Mary; Weir.
Uhles, Clell Michael; Pittsburg.
Utley, Lloyd Ashford; Chetopa.
Umbarger, Opal J.; Earlton.
Utz, Matt George; Pittsburg.
Utz, Rose Alice; Pittsburg.
Van Gastel, Pauline; Pittsburg.
Van Orsdall, Muriel Iowa; Pittsburg.
Veatch, Lila Madora; Weir.
Vehlow, Esther; Walnut.
Veerkamp, William Bryan; *Neosho, Mo.*
Vermilya, Lydia Faye; Attica.
Vessadine, Anita Gennie; Mulberry.
Villars, Icy Bell; Eldorado.
Vining, George H.; Altoona.
Waddle, Bertha Jane; Osage City.
Waddle, Goldie Irene; Faulkner.
Wade, Haskel Brascal; Elk City.
Waite, Maggie J.; Kansas City.
Walker, Clarence Bee; Chetopa.
Walker, Dott; Mound City.
Walker, John Raymond; Pittsburg.
Wallace, NeVella Jeanette; Pittsburg.
Walsh, Mary Ellen; Weir.
Walters, Patty May; *Rogers, Ark.*
Waltz, William Benjamin; Pittsburg.
Ward, Blanche; Wellington.
Ward, Maurice Arnold; Altoona.
Ward, Wallace Alvin; Caney.
Ward, Wilmott; *Nevada, Mo.*
Wartenbee, Mamie Belle; Newton.
Wartenbee, Marie; Chanute.
Wasem, Frieda Augusta; Girard.
Wasem, Grace Aurora; Girard.
Watson, Bessie Bee; Altoona.
Waugh, Hazel Lucile; Edna.
Webb, Gladys Marveline; Girard.
Webb, Lela Maude; Galena.
Webb, Richard Joseph; McCune.
Weir, Evanelia; Pittsburg.
Welch, Gladys Gammage; Hiattville.
Welch, Lena; Ottawa.
Wells, George; Cedarvale.

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* Deceased.

COLLEGE FRESHMEN—Continued.

Wells, Virgil Leon; Fort Scott.
Welton, Grace Mae; Princeton.
Welty, Harold Gibson; Walnut.
White, Birchie; *Asbury, Mo.*
White, Ruth Ada; Stark.
Whitehead, James; Carona.
Wickware, John Hale; Pittsburg.
Wiedenman, John Charles; Hepler.
Wieland, Mrs. Mary Fern; Scammon.
Wilbert, Flourine Margaret; Pittsburg.
Wikoff, Leo Charles; Lyons.
Wilkinson, Bernice; Weir.
Wilkinson, Cecil; Weir.
Willard, Louetta Zelma; Arcadia.
Willard, Ted Morris; Cherokee.
Williams, Adah Hazel; Pittsburg.
Williams, Cecil Price; Arkansas City.
Williams, Cleo; Erie.
Williams, Floy; Sedan.
Williams, Frances Adah; Arcadia.
Williams, Gladys Mary; Altamont.
Williams, Ida Mildred; Holton.
Williams, William Lee; Weir.
Williamson, Edward Tyre; Iola.
Wilson, Albert Dewey; Weir.
Wilson, Edith Josephine; Topeka.
Wilson, Mrs. Jane; Scammon.
Wilson, John Benjamin; Opolis.
Wilson, Katie; McCune.
Wilson, Mayme Ellen; Harper.
Wilson, Sarah Inez; Moline.
Wimmer, Gordon Thomas; Valeda.
Wimmer, Helen Virginia; *Liberal, Mo.*
Wing, Elizabeth M.; Fort Scott.
Wing, Mrs. Hester; Columbus.
Wing, Raymond; Columbus.
Winn, Beulah Olive; Coffeyville.
Winter, Lucille Augusta; Columbus.
Wischer, Alva Lewis; Parsons.
Wittram, Paul George; Fort Scott.
Wogahn, Bertha; Fort Scott.
Wohlford, Olive May; Harper.
Wolf, Olga White; Pittsburg.
Wolfe, Thomas Walkup; *Copan, Okla.*
Wolleson, Fitzhugh Lee; Pittsburg.
Wolleson, Harold Adolph; Pittsburg.
Wood, Marie E.; Fort Scott.
Wood, Margaret Barnard; Chanute.
Woodbury, Harry Eugene; Pittsburg.
Wooster, Leslie Alfred; Erie.
Wrestler, Ferna Eldoona; Walnut.
Wright, Harry Samuel; Coffeyville.
Wright, Kenneth Lewis; Iola.
Wright, Ruth Lenore; Pittsburg.
Wycoff, Susie Elvira; Wellington.
Wyman, Euladell; Pittsburg.
Young, Clyde; Moran.
Young, Ruth; Weir.
Ziegler, Helen Louise; Pleasanton.
Zimmerman, Frances Willard; Holton.

COLLEGE SPECIALS.

Albertson, Elizabeth; Pittsburg.
Allen, Vida Lucile; Mulberry.
Ashwood, Wave Shaw; *Inola, Okla.*
Baker, Mrs. Barney McKinley; *Grove, Okla.*
Beachner, Arthur; St. Paul.
Bentley, Margaret Stiles; Coffeyville.
Birge, Mamie M.; Chetopa.
Bishop, Nancy E.; Garland.
Callery, Julia; Pittsburg.
Carmichael, Perry; *Webb City, Mo.*
Casey, Jessie Myrtle; McCune.
Cockerill, Marion Blume; Pittsburg.
Coker, Frederick Cecil; Columbus.
Connaway, Mrs. Desta; Mulberry.
Copher, Nellie Doris; *Fort Worth, Tex.*
Cornelia, Sister Mary; Pittsburg.
Costello, Mary Elizabeth; Hardy.
Courtright, Raymond Orland; Pittsburg.
Crawford, David; Girard.
Cross, Carl D.; Pittsburg.
Dickinson, F. H.; Pittsburg.
Dickman, Ida C.; Holton.
Dunlap, Mrs. Addie C.; *Oronogo, Mo.*
Edwards, Mrs. Eliza T.; Pittsburg.
Emery, Mrs. Ruby Nance; Pittsburg.
Erskine, Ralph W.; Pittsburg.
Fitzgerald, Mrs. Grace; Walnut.
Foland, Esther Lee; *Nevada, Mo.*
Gildart, Rita Claire; Neodesha.
Godding, Bert Lincoln; Atchison.
Goddis, Josephine Georgia; Pittsburg.
Graves, Mrs. Bessie Lee; Pittsburg.
Graves, Coke Bernard; Pittsburg.
Greene, Mrs. Nellie Weaver; *Muskogee, Okla.*
Hanna, Gordon Vayne; Pittsburg.
Harmon, Gladys Cloyd; Kansas City.
Hayden, Bess; Pittsburg.
Henry, Inez; Cherryvale.
Hibbs, Frank Marion; *Carterville, Mo.*
Honk, Meda Kate; Mulberry.
Israel, Constance; Farlington.
Jefferson, Jennie; Independence.
Johnson, Ellen Christine; Pittsburg.
Johnston, Vida Lorene; Arcadia.
Kaufman, Mrs. Pearl Yates; *Okla. City, Okla.*
Keady, Ray; Pittsburg.
Kelly, Annie Agnes; Fulton.
Kimmel, Earl Hubert; Wichita.
King, Dewey; Pittsburg.
Lasley, Mary Esther.
Laudenslager, Nina Marie; *Carthage, Mo.*
Leamon, A. Dale; Pittsburg.
Leach, Caroline Elizabeth; Pittsburg.
Leach, Marion Tate; Baldwin.
Lowe, Cornelius Marshall; Blue Mound.
Lucas, Mrs. Pearl Macey; Columbus.
McCray, Claude Richard; Neodesha.
McGrath, Sr. M. Benigna; Pittsburg.
McKinney, Mrs. Louise; Galena.
Mangrum, Mrs. Pearl Mable; Pittsburg.
Marsh, Thomas; Gross.
Markham, Dorothy; Pittsburg.
Martinache, Charles Alfred; Pittsburg.
Martinache, Frank J.; Franklin.
Minard, Mrs. Anna; Pittsburg.
Moody, Nellie Lenore; Arma.
More, Lewis Walter; Pittsburg.
Myers, Viola; Pittsburg
Nation, James Milton; Erie.
New, Nancy; Chetopa.
Neill, Winifred S.; Erie.
O'Dell, Bessie Belle; Opolis.
O'Dell, Claude W.; Opolis.
O'Donnell, Sara Cecilia; Scammon.
Payne, L. F.; *Glasgow, Mo.*
Pearce, George Thomas; Sterling.
Pitts, Lucile Iva; Fort Scott.
Pitts, Ruth Eulala; La Harpe.
Pitts, Zetta C.; La Harpe.
Pritchett, Mabel Edna; Pittsburg.
Reagan, Mendel Franklin; Columbus.
Savage, Verona Virginia; *Glasgow, Mo.*
Scranton, Arthur; Pittsburg.
Seymour, Kate B.; Mound City.
Sharp, Oscar; Pittsburg.
Selva, Joe; Radley.
Smith, Nora Edith; Parsons.
Stabler, Lucie; Niotaze.
Stewart, Harriet Enfield; Altoona.
Tabor, B. F.; Fredonia.
Tanner, Walter E.; Pittsburg.
Thomas, Beulah Mary; Topeka.
Thomas, Earl; *Carterville, Mo.*
Tibbs, Lena Cloe; *Siloam Springs, Ark.*
Wasser, Charles R.; Pittsburg.
Westover, Maurice F.; *Joplin, Mo.*

COLLEGE SPECIALS—CONTINUED.

White, Helen T.; Weir.
Willan, Robert Mason; Pittsburg.
Williams, Frances Blue; Pittsburg.
Wilson, Ruby; Pittsburg.
Wilson, William; Pittsburg.
Wilson, Verner L.; Pittsburg.
Wimmer, Paul J.; Mulberry.
Wright, Mrs. Aurora; Oswego.
Wyman, Audria M.; Pittsburg.
Young, Mrs. Lula M.; Walnut.
Zickgraf, Mrs. Mary L.; Pittsburg.

STUDENTS OF DEPARTMENT OF MUSIC.

Allen, Fern; Pittsburg.
Allen, Helen Inez; Pittsburg.
Allen, Mac Arner; Pittsburg.
Allison, Naoma B.; Chanute.
Angell, Rowena Lavon; Pittsburg.
Baker, Letha Lucile; Erie.
Barani, Thelma; Pittsburg.
Barnes, William I. N.; Weir.
Barnthouse, Mrs. Ethel; Pittsburg.
Baxter, Georgette; Pittsburg.
Bean, Bessie May; Pittsburg.
Beasley, Lynette Elizabeth; Pittsburg.
Beecher, Loraine Emma; Pittsburg.
Bell, Cleo; Pittsburg.
Bennett, Esther; Pittsburg.
Benton, Bernice; Pittsburg.
Benton, Roberta; Pittsburg.
Blacker, Wallace Edwin; Pittsburg.
Block, Beth; Pittsburg.
Bowker, Vivian; Pittsburg.
Bowman, Mildred Althea; Pawnee Rock.
Branstetter, Neil V.; Pittsburg.
Bresee, Nadine; Pittsburg.
Briggs, Ellsworth Reese; Pittsburg.
Briggs, Lawrence Lindburg; Mulberry.
Briggs, Hershel Renaldo; Pittsburg.
Broyles, Magretta Lee; Pittsburg.
Brumbarger, Flora Mae; Arcadia.
Bryant, Homer LaFayette; Galena.
Bureau, Elise; Pittsburg.
Burgess, Bernice Opal; Scammon.
Caffey, Elizabeth; Pittsburg.
Caffey, Lou; Franklin.
Callery; Anabel; Pittsburg.
Carrier, Emile Nicholas; Frontenac.
Carter, Helena; Pittsburg.
Caskey, Nadine Margaret; Pittsburg.
Chew, Grace; Pittsburg.
Christmore, Enid Amelia; Edna.
Chitty, Josephine Louise; Fort Scott.
Churchill, Frances M.; Columbus.
Cloyd, Esther Alma; Pittsburg.
Conboy, Florence; *Joplin, Mo.*
Courtney, Iona Faye;* Savonburg.
Crow, Francis Luther; Hutchinson.
Dale, Olivia L.; *Carthage, Mo.*
Daniels, Helen Eloise; *Catlettsburg, Ky.*
Dellenger, Mary C.; Pittsburg.
Dewar, Cyrus T.; *Kansas City, Mo.*
Dawson, Kathreen; McCune.
Fenn, Elizabeth; Pittsburg.
Fern, Mary Elizabeth; Scammon.
Fikani, John G.; Frontenac.
Forseman, Mary Margaret; Pittsburg.
Forsyth, Floyd; Pittsburg.
Friend, Stella Arvilla; Pittsburg.
Gable, Esther; Pittsburg.
Gerken, Georgene Leigh; Girard.
Gibson, E. Louise; Pittsburg.
Gieselman, Eunice; Pittsburg.
Gilbert, Mae; Pittsburg.
Godden, Frances Elizabeth; Caney.
Goodhall, Charles Albert; Pittsburg.
Gorrel, Jaunita; Pittsburg.
Graham, Blanche Opal; Pittsburg.
Grandle, Nina Katherine; Pittsburg.
Green, Katherine L.; Longton.
Gregg, Helen Corinne; McCune.
Gregory, Wayland Charles; Pittsburg.
Gudgen, Blanche Opal; Pittsburg.
Gunsaullus, Edna May; Fort Scott.
Hamilton, Opal Marguerite; Independence.
Hammel, Mildred Alice; Pittsburg.
Hatten, Ruth Frances; Westphalia.
Hay, Cressy Jane; Sedan.
Hayden, Zella Vere; Pittsburg.
Helt, Carrie May; Winfield.
Henderson, Thelma Madeline; Frontenac.
Hickman, Hazel Clifton; Pittsburg.
Hillegas, Matilda C.; Chetopa.
Hobson, Ida Ruth; Pittsburg.
Hoover, Lola; Mount Hope.
Housel, Mavis Victoria; Pittsburg.
Humphrey, Shirley Virginia; Mound Valley.
Jackson, Alda Mae; Pittsburg.
James, Eula Marie; Arcadia.
Johnson, Kathryn; Pittsburg.
Keating, Helen M.; Fulton.
Kellogg, Virginia; Pittsburg.
Killough, Maurice John; Pittsburg.
King, Frances; Pittsburg.
Lasley, Mary Esther; Pittsburg.
Leamon, A. Dale; Pittsburg.
Litton, Glenn Benjamin; Pittsburg.
Loskot, Bessie Pauline; Caldwell.
Lough, Vivian; Pittsburg.
Lucas, Alma; Pittsburg.
McCaskill, Agnes Ruby; Pittsburg.
McCoy, Faye Lillian; Pittsburg.
McDowell, Ruth Evalyn; La Cygne.
McDonald, Mary; Pittsburg.
McDonald, Robert; Pittsburg.
McGhie, Mildred Pauline; Columbus.
McGonigle, Zoe Dore; Pittsburg.
McKinney, Mrs. Louise; Galena.
McLatchey, Mary Winona; Topeka.
McQuiston, Julia Alice; Independence.
Marsh, Tom; Gross.
Martinache, Marjorie; Pittsburg.
Micca, Margaret; Pittsburg.
Milleson, Sybil Lee; Pittsburg.
Mitchell, Margaret Olive; Pittsburg.
Mitchell, Thelma Lois; Pittsburg.
Moherman, Laura F.; Wellsville.
Moore, Edwina; Pittsburg.
Moore, Ethel Jessie; Fort Scott.
Morgan, Katie; Mulberry.
Myers, Hattie Esther; Cherokee.
Neill, Dorothy Isabel; Erie.
Newman, Alma; Pittsburg.
Newman, Clara; Pittsburg.
Newton, Iva Myrtle; Weir.
O'Connor, Bonnie; Pittsburg.
O'Connor, Loretta; Pittsburg.
Oldham, Mary Elizabeth; Pittsburg.
Ott, John Louis; Kinsley.
Palmer, Maurine; Pittsburg.
Perrine, Vivian Pauline; *Siloam Spgs., Ark.*
Person, Laura; Galena.
Phayer, Joseph; Pittsburg.
Phillips, Edith M.; Pittsburg.
Potter, Martha Lois; Pittsburg.
Pratt, Mrs. C. W.; Pittsburg.
Purdy, Marie; Chanute.
Rader, Velva; Caney.
Rall, Lavon Bee; Pittsburg.
Reasor, Glen Estal; Pittsburg.
Reasor, Mrs. Stella; Pittsburg.

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* Deceased.

MUSIC STUDENTS—CONTINUED.

Renfrew, Edith Lillian; *Woodward, Okla.*
Ridgeway, Nema M.; Edna.
Ringle, Wallace Newton; Pittsburg.
Rock, Mildred; Pittsburg.
Rodenburg, Ferne Hazel; Pittsburg.
Rose, Mirriam; Pittsburg.
Rumbley, Olive Mae; Chanute.
Salisbury, Bessie; Pittsburg.
Scott, Eloise Margaret; Pittsburg.
Scott, Wilma; Pittsburg.
Sedoris, Wilma; Pittsburg.
Sexton, Ruth Katherine; *Siloam Spgs., Ark.*
Seymoure, Kathleen; Mound City.
Shafer, Dorothy Jane; Pittsburg.
Shenk, Noah H.; Mulberry.
Shewalter, Ruth Mae; Pittsburg.
Shiffler, Avery Oliver; Pittsburg.
Sickels, Gracia Marion; Pittsburg.
Smith, Leta Elizabeth; Pittsburg.
Snodgrass, Robert R.; Franklin.
Sprague, Gladys Marie; *Carl Junction, Mo.*
Stamm, Gertrude Alene; Pittsburg.
Stephenson, Ray; Pittsburg.
Stevison, Vorice Myron; Pittsburg.
Sullivan, Mrs. W. L.; Pittsburg.
Sumner, Ella Marie; Galena.
Tabor, Bert F.; Fredonia.
Taylor, Dee Eva; Arcadia.
Taylor, Katherine; Pittsburg.
Taylor, Mary Elizabeth; Pittsburg.
Telfer, Margaret Arnot; Pittsburg.
Tilton, Ruth Elizabeth; Edna.
Todd, Edith I.; Altamont.
Travis, John Elbert; *Liberal, Mo.*
Walker, Florinne Marcella; Pittsburg.
Walters, Bessie; Scammon.
Walters, Besse; Scammon.
Wartenbee, Marie; Chanute.
Waskey, Deane; Pittsburg.
Waskey, Deane Muriam; Pittsburg.
Webb, William;* Pittsburg.
White, Hubert Snow; *Rockville, Ind.*
Williams, Floy; Sedan.
Williams, Helena Cecilia; Peru.
Williamson, Lola Oral; Pittsburg.
Williamson, Oral Lola; Pittsburg.
Wilson, Madgelyn; McCune.
Wood, Marie E.; Fort Scott.
Wright, Pluma Lou; Pittsburg.

CORRESPONDENCE-EXTENSION STUDENTS.

(FALL SEMESTER, 1918, ONLY.)

Abbey, Thelma Irene; Pleasanton.
Akers, Berncie May; Chanute.
Aldrich, Hazel Irene; Kingman.
Alexander, Emery Fulton; Olathe.
Alexander, Gertrude M.; Pittsburg.
Alexander, Gladys Nelle; Pittsburg.
Alexander, Marguerite; *Webb City, Mo.*
Alexander, LaVon B.; Pittsburg.
Alferman, Minnie; Olathe.
Allen, Lora; Pittsburg.
Allen, Minnie Bowen; Iola.
Alley, Amy Alice; Toronto.
Allison, Mrs. Elsie N.; Parsons.
Ammel, Sister Carmela; St. Paul.
Andrus, Laura; Elsmore.
Archer, Viola Hazel; Galena.
Aton, Rex; Cherryvale.
Atwood, Vivian; Pittsburg.
Austin, Leola May; Mulberry.
Bailey, Julia Blanche; Parsons.
Baker, Mrs. Barney K.; *Picher, Okla.*
Baker, Gertrude V.; Coffeyville.
Ball, Ella May; Iola.
Barber, Gertrude Louise; Coffeyville.
Barker, Maude; Olathe.
Barnes, Blanche Evelyn; Mound Valley.
Barnes, Della; Parsons.
Barnes, Margaret; Olathe.
Barnes, Sadie Isabel; *Chitwood, Mo.*
Bassett, Blanche S.; Walnut.
Bauer, Erma Marie; *Joplin, Mo.*
Baysinger, Julia Emeline; Buff City.
Beckman, Hanna Mae; *Webb City, Mo.*
Bell, Angie Lucile; Independence.
Bennett, Grace Margaret; Scammon.
Bentley, Margaret Stiles; Coffeyville.
Berry, Carrie Annette; *Corsicana, Tex.*
Bertrand, Harriet Goldie; Cambridge.
Bettes, Ruth; Independence.
Billiard, James; Dunkirk.
Birge, Mamie M.; Chetopa.
Bitner, Bertha; Burton.
Black, Sanders W.; Columbus.
Blackburn, Evelyn Louise; Parsons.
Blaes, Sister M. Florence; Parsons.
Blue, Sallie Inskeep; Valley Falls.
Board, Dollie; *Joplin, Mo.*
Boone, Sister Alexander; St. Paul.
Born, Marshall Earl; Holton.
Bostwick, Ella; Iola.
Botts, Mary Winifred; Havana.
Bowers, Janet; Galena.
Bowlus, Ardie Francis; Cherokee.
Bowlus, Harry John; Mulberry.
Boyce, Mabel Benita; Galena.
Boyd, Gertrude; Galena.
Boyd, Grace Evelyn; Coffeyville.
Bradbury, Consuelo Florence; Edna.
Bradley, Opaline Laoma; Parsons.
Brakey, Maude Marie; Neodesha.
Brandenburg, Glendale; Hutchinson.
Brandenburg, Lucile Eleanor; *Des Moines, Iowa.*
Briggs, Kate L.; Olathe.
Brisbin, Leona; Scammon.
Brown, Anna Rebecca; Pittsburg.
Brown, Ethel Zora; Havana.
Brown, Georgia Thornton; Independence.
Brown, Helen M.; *Joplin, Mo.*
Brown, Lillian Belle; *Bolivar, Mo.*
Brown, Nina Elizabeth; Pittsburg.
Bruno, Mary Helen; Parsons.
Bucher, Martha E.; *Carthage, Mo.*
Buford, Juliette Jewell; *Joplin, Mo.*
Burkholder, Grace Catherine; Coffeyville.
Burnett, Mabel; Independence.
Bushnell, Hilda Corinne; Mound Valley.
Butcher, Avis; Garnett.
Butler, James Clay; Chetopa.
Butts, Ina S.; Nickerson.
Callahan, Mrs. M. A.; Girard.
Canfield, Theressa Sara; Scammon.
Cannan, Nellie Grace; Erie.
Carey, Mrs. Mary R.; Fredonia.
Carl, Hazel B.; Parsons.
Carmichael, Perry; *Webb City, Mo.*
Carnagey, Charlsie Marie; La Cygne.
Carnagey, Thelma Josephine; La Cygne.
Carney, Dora; *Joplin, Mo.*
Carney, Winnie; *Joplin, Mo.*
Carpenter, Gladys Opal; Iola.
Carr, Nora A.; Parsons.
Carroll, Jane Morrow; Wichita.
Carroll, Mary; Frontenac.
Carter, Mrs. Anna E.; *Joplin, Mo.*
Cash, Mrs. Dora; Independence.
Caskey, Ethel; Hutchinson.
Caskey, Nellie E.; Hutchinson.

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* Deceased.

CORRESPONDENCE-EXTENSION STUDENTS—Continued.

Caskey, Theresa Scott; Hutchinson.
Cass, Mrs. Edith LaVina; Savonburg.
Cassady, Edith E.; Pittsburg.
Cather, Henrita Grace; *Jasper, Mo.*
Caudle, Velma; Oswego.
Chaffin, Lurissa Myers; Hutchinson.
Chambers, Estella Mae; Coffeyville.
Charles, Leora Yvette; Independence.
Cherry, Mrs. Nevada; Parsons.
Clark, Anderson Edmond; Parsons.
Clark, Ione Vivian; *Carl Junction, Mo.*
Clark, Laura Viola; Chetopa.
Clavin, Maude E.; Olathe.
Clayton, Nora; *Joplin, Mo.*
Cleavinger, Hattie; Lowemont.
Cline, Frank J.; Towanda.
Clouse, Alpha Rachel; Stark.
Coles, Winifred Aline; *Joplin, Mo.*
Colie, Persis; Olathe.
Conboy, Florence; Parsons.
Condra, Minnie Anne; Coffeyville.
Condra, Theo Lee; Coffeyville.
Conover, Sadie; Pleasanton.
Corlett, Eva; *Joplin, Mo.*
Cosgrove, Teresa; Olathe.
Cowan, Mary Jane; *Pierce City, Mo.*
Cox, Anna Alice; *Jasper, Mo.*
Crihfield, Tillie Pinckard; Ashland.
Crook, Rozella Elizabeth; Independence.
Croucher, Marguerite; Coolidge.
Curran, Alice Theresa; Plains.
Dale, Sadie Jane; Hutchinson.
Damm, Lillian Elizabeth; *Joplin, Mo.*
Daniels, Ella H.; *Joplin, Mo.*
Danielson, Edna Mae; Elsmore.
Daugherty, Julia; Parsons.
Davidson, Ethel; Chanute.
Decatur, Lura Ann; *Webb City, Mo.*
DeLury, Katharyn Mae; Independence.
Delphine, Sister Mary; Kansas City.
Dennis, Clement V.; Independence.
Dennis, Earl A.; Havana.
Dennis, Genevieve Alice; Olathe.
Devlin, Agnes Christina; Scammon.
Dewhirst, Mabel N.; Girard.
Dickerson, Orra May; Deering.
Dienst, Mary Eleanor; Independence.
Dienst, Wilhelmina; Coffeyville.
Dietrich, Susie A.; Mulberry.
Dills, Edna Mae; Baxter.
Ditson, Jessie Anna; Galena.
Dodd, Jackson A.; Coffeyvllle.
Dodson, Clara May; Bartlett.
Dolan, Ellen Mae; Pttsburg.
Donahey, Helen Shirley; Pittsburg.
Downing, Ethel; Galena.
Drake, Jennie; Parsons.
Dugger, Clara May; Columbus.
Dugger, Faye Hazel; Columbus.
Dunaway, Edith; Galena.
Dunlap, Mrs. Addie C.; Oronogo.
Eccles, Eveline; Hutchinson.
Edgerton, Mary; Edna.
Edmunds, Nellie; Independence.
Elliott, Pearl Ellen; Savonburg.
Ellis, Ellen Juliet; Cherryvale.
Elswick, Lois; Parsons.
Englehardt. S. Pearl; Kincaid.
Epperson, Geneva Ellen; Pittsburg.
Ericson, Jaunita A.; Elsmore.
Ericson, Myrtle; Elsmore.
Evans, Mozella G.; Independence.
Evans, Myril Ann; Independence.
Ewing, Bessie Lucile; Olathe.
Faddis, Ida May Weith; Iola.
Fenn, Mary Nelle; *Joplin, Mo.*
Ferguson, Kate; Parsons.
Ferguson, Nita; Chanute.
Ferris, Ada Margaret; Scammon.
Ferrell, Mrs. Lura Gastineau; Le Hunt.
Fitzpatrick, Sister M. Ignatius; Paola.
Flagg, Ethelyn Lavera; Pittsburg.
Flaglie, Lena L.; *Joplin, Mo.*
Flater, Mertie Estella; Altamont.
Foster, Lena Reah; *Joplin, Mo.*
Fowler, Rowena Jaunita; Iola.
Frankeberger, Edna; *Carthage, Mo.*
Frankenfield, Olive May; Pittsburg.
Frazier, Elizabeth; Girard.
Friley, Walter Lewis; Independence.
Frye, Edith; Olathe.
Fulkerson, Freddie Lidia; *Joplin, Mo.*
Gaw, Emily Elmeir; Girard.
Gear, Ben. H.; Penalosa.
Gentry, Mary; *Joplin, Mo.*
Gibson, Nina; Pittsburg.
Gibson, Mrs. Olive N.; *Webb City, Mo.*
Gilbert, Mrs. Bert; Olathe.
Gilbert, Grace Marie; McCune.
Gilmer, Alta Pauline; *Webb City, Mo.*
Gilmer, Olive Esther; *Webb City, Mo.*
Gilmore, Viola Belle; Chetopa.
Glucklich, Sadie; La Cygne.
Goeppert, Paul O.; Independence.
Goodpasture, Lola Ethel; Baxter.
Gorman, Kathryn Mary; *Webb Cty, Mo.*
Graham, Mary Ellen; Pittsburg.
Grant, Sara Agatha; Scammon.
Green, Caroline E.; Hutchinson.
Greer, Leland V.; Breezy Hill.
Gregg, Ruth Marie; Pittsburg.
Gregory, Blanche; Walnut.
Griffith, Phebe; *Carthage, Mo.*
Grimes, Minnie Seymour; Pittsburg.
Gude, Katheryn Mae; Weir.
Guthridge, L. A.; Independence.
Hagar, Sister Joachim; St. Paul.
Haggard, Alta Laura; Oswego.
Halbert, Mary Cecile; Baxter.
Hall, Fern; Phillipsburg.
Hall, Harry Hilbert; *Joplin, Mo.*
Hall, Rosa Manila; Pittsburg.
Hamilton, Bernice June; McCune.
Hammosul, Ethelwyn; Olathe.
Haner, Merritt Edwin; Galena.
Hanes, Martha C.; Olathe.
Hankins, Opal May; Sedan.
Hargrove, Mabel Elene; Wilmore.
Harlan, Hazel A.; *Webb City, Mo.*
Harley, Willa Irene; McCune.
Harney, Zenana Florence; Independence.
Harris, Clara; Iola.
Harris, Mrs. Louvinia Dockery; Galena.
Harwood, Olive Mae; *Argora, Idaho.*
Hastin, Ethel Ella; *Joplin, Mo.*
Hawkins, Mrs. Anna B. Blackmore; Havana.
Haynes, Vivian D.; La Cygne.
Hays, Martha; Iola.
Heald, Daisy D.; *Joplin, Mo.*
Heck, Agnes Marie; *Rose Hill, Mo.*
Heigele, Margaret; Pratt.
Helton, Georgia Archer; Galena.
Henley, Eleanor; *Carthage, Mo.*
Henry, Stella Fay; Independence.
Herman, Mrs. Kate S.; Olathe.
Hess, Kathleen G.; Hutchinson.
Hewitt, Mrs. Hazel Bell; Parsons.
Hickman, Alma Pearl; *Golden City, Mo.*
Higgins, Ella G.; Pittsburg.
Hildebrand, Elizabeth; Hutchinson.
Hill, Anna Eugene; Independence.
Hill, Anna Florence; Paola.
Hill, Catherine; Hutchinson.
Hill, Mary Belle; Nickerson.
Hoffman, Henry Theodore; Great Bend.
Holman, Flo E.; Mulberry.
Hood, Zula Frances; Mullinville.
Hoover, Lucile; Independence.
Hosman, Arley Lee; Carterville.
Hotton, Pauline Irene; Dodge City.
Householder, Stanford Linden; *Pineville, Mo.*
Hudson, Helen Adele; Fort Scott.
Huff, Emma; Savonburg.
Huff, Sabra; Savonburg.

CORRESPONDENCE-EXTENSION STUDENTS—CONTINUED.

Hughes, Elva; Independence.
Hunt, Bessie Cecelia; Franklin.
Ingham, Anna Blanche; Fort Scott.
Jack, Pearl Irma; Wichita.
Jackson, Jesse Walter; Newton.
Jackson, Laura Elizabeth; Elsmore.
Jay, Mrs. Gay M.; Coffeyville.
Jefferson, Jennie; Independence.
Jenkins, Evelyn; Scammon.
Jewell, Cora Irene; Fulton.
Jewell, Hellen; Fulton.
Jewell, Nellie Rose; Fulton.
John, William Ellis; *Joplin, Mo.*
Johnson, Esther Walberg; Savonburg.
Johnson, Perry Francis; Abilene.
Jones, Mrs. Charles W.; Olathe.
Jones, Lizzie; Frontenac.
Jones, Mary Frances; Olathe.
Jones, Willie Belle; Parsons.
Kannarr, Bessie Edith; New Albany.
Kauffman, Elmer F;. New Ulysses.
Kautz, Bernice S.; Galena.
Kautz, Beryl; Girard.
Kautz, Edith Mary; Girard.
Keesling, Charles E.; Dodge City.
Kelley, Prudie; Pittsburg.
Kelley, Verna Irene; Pittsburg.
Kennedy, Mrs. Eunice S.; Pittsburg.
Kerr, Jaunita; *Webb City, Mo.*
Kimmel, Earl H.; Wichita.
King, Callie M.; Pittsburg.
King, Mrs. Laurie; Iola.
Kirkpatrick, Sylvia Francita; Independence.
Knight, Lewis Grant; *Joplin, Mo.*
Kniss, Minnie; Morehead.
Knotts, Mintie T.; Cherokee.
Knotts, Zelda Rebecca; Cherokee.
Langford, Lena Marie; Kincaid.
Larrick, Flora LaVouche; Latham.
Lathrop, Myrtle Lerena; Scammon.
Laughlin, Nettie B.; *Drexel, Mo.*
Lear, Carolyn; Hutchinson.
Lee, Percy H.; *Kansas City, Mo.*
Leonard, Beulah Mae; Galena.
Leonard, Ruby O.; Galena.
Lesher, Louise; Pittsburg.
Leslie, Jessie C.; Pittsburg.
Liggett, Nellie Vinta; *Joplin, Mo.*
Linton, Mrs. Ida M.; *Joplin, Mo.*
Liston, Myrtle; Fredonia.
Litton, Glenn Benjamin; *Golden, Colo.*
Livermore, Carrie M.; *Joplin, Mo.*
Lonberger, Katharine; Parsons.
Losey, Dora Jones; Independence.
Loveless, William Franklin; Marion.
Lowe, Lavon Mary; Pittsburg.
Lowry, Ella; *Joplin, Mo.*
Lucke, Gladys Esther; Cherryvale.
Lydard, Vera L.; *Joplin, Mo.*
McBride, Pearl; Pittsburg.
McCandless, Lizzie; Hutchinson.
McCarthy, Louetta; Parsons.
McCartney, Marie; Columbus.
McCarty, Margaret Maria; Coffeyville.
McColm, Mabel Emily; Cherokee.
McCormack, Lulu M.; Iola.
McCue, Ernest Francis; Mound Valley.
McCully, Maud; Coffeyville.
McCurry, Leona Bell; Peru.
McCurry, Ruth; Peru.
McDonald, Cora; *Joplin, Mo.*
McDonald, Edna R.; Burden.
McElroy, Luresa; Hutchinson.
McEntee, Mamie E.; Carterville.
McFarland, Sister Colombierre; St. Paul.
McFerrin, Mary Grace; Independence.
McGhie, Mildred Pauline; Columbus.
McGinnis, Harry; Chapman.
McGinnis, Mrs. Jennie B. Russell; Chapman.
McLean, Florence; Pittsburg.
McLean, Margaret; Fort Scott.
McMurray, Blanche Irene; Latham.
McNally, James Ewing; *Joplin, Mo.*
McNally, Mary; Coffeyville.
McNulty, Susie Virginia; Coffeyville.
Mandeville, May Nina; Kingman.
Mantooth, Frank B.; Wayside.
Marie, Sister Mel; Kansas City, Kan.
Marker, Nettie Idella; Ozawkie.
Masters, George E.; *Carl Junction, Mo.*
Matthews, Lutie Belle; Pittsburg.
Meador, Ava; *Carthage, Mo.*
Meador, Ellen; *Carthage, Mo.*
Meliza, Olive Belle; Iola.
Mellen, Edna C.; Parsons.
Mendenhall, Mary Margaret; La Cygne.
Mertins, Helen B.; *Carthage, Mo.*
Mezel, Mabel Clara; Mulberry.
Michel, Elsie Lillian; *Joplin, Mo.*
Miller, Adelle C.; *Webb City, Mo.*
Miller, Mrs. Inez Betz; Hutchinson.
Miller, May; *Joplin, Mo.*
Molohan, Irene; Parsons.
Molloy, Anna T.; Elkhart.
Montgomery, Luella Jane; Iola.
Moody, Bertha Ester; *Joplin, Mo.*
Moody, Florence; Columbus.
Moore, Lloyd Calhoun; Sedan.
Moore, Gladys A.; Valeda.
Moore, Mattie; Parsons.
Moran, Kathryn V.; *Webb City, Mo.*
Mott, Olive; Columbus.
Mudd, Myrtle Fredonia; *Joplin, Mo.*
Mullikin, Ida Caroline; Cherryvale.
Munday, Willie; *Joplin, Mo.*
Murray, Anna Josephine; Iola.
Murray, Janet Mackie; Scammon.
Murray, Roy; Olathe.
Myers, Margaret Ann; Independence.
Myers, Clara; Weir.
Nelson, Inez M. E.; *Jenks, Okla.*
Nesbit, Melanie; *Webb City, Mo.*
Nevius, Katie Belle; Valeda.
Nevius, Theodora Florence; Edna.
Newell, Will L.; Independence.
Nibarger, Jessie C.; *Joplin, Mo.*
Nickell, William Anderson; *Joplin, Mo.*
Nichols, Alma May; Hutchinson.
Nicholson, E. Pearl; McCune.
Niehoff, Claire Virginia; *Boone, Iowa.*
Nieman, Hulda Sophia; Nortonville.
Nieman, Lena Elizabeth; Huron.
Norris, Hugh; *Tulsa, Okla.*
Norwood, Warren Ross; Tonganoxie.
Notingham, Bessie Avis; Pittsburg.
Oberg, Ethel Louise; Mulberry.
OBrien, Olive M.; Independence.
O'Connell, Kathleen Elizabeth; Independence.
O'Donnell, Sara Cecilia; Scammon.
Oldham, Georgia Anna; Mulberry.
Oldham, Mary Elizabeth; Pittsburg.
Oliphant, Bess; Columbus.
Oliver, Anna; Pittsburg.
Oliver, Salina; Pittsburg.
Olson, Ella Genevieve; Elsmore.
Olson, Nada; Elsmore.
Ott, Alberta Elizabeth; Olathe.
Overman, Irma J.; Mulberry.
Paige, Lena May; Hutchinson.
Parker, Augusta R.; Hutchinson.
Parker, Jessie A.; Olathe.
Parker, Lois E.; Independence.
Parker, Zula W.; Olathe.
Pease, William Ross; Independence.
Peck, Daisy M.; *Joplin, Mo.*
Pember, Mrs. Ethel; Parsons.
Pendleton, Delia Lucile; Havana.
Person, Laura Elizabeth; Caney.
Perry, Aria Estelle; Independence.
Pettiner, Marjorie Irene; Coffeyville.
Phillips, Mrs. Fern Field; Columbus.

CORRESPONDENCE-EXTENSION STUDENTS—CONTINUED.

Phillips, Lucinda Jane; Mulberry.
Phillips, Myrtle Glenter; Independence.
Pickerill, Orville Alfred; Niotaze.
Piper, Beryl Hammers; Scammon.
Pittinger, Leah Leone; Havana.
Plum, Lucia Ann; Walnut.
Porter, Mrs. Caroline W.; Parsons.
Post, Della Leah; Mound City.
Potter, Jane M.; Weir.
Pratt, Gabriella May; Fort Scott.
Preston, Lena Alice; Agricola.
Priestley, Clara Odessa; La Cygne.
Pritchard, Laura Ida; Wichita.
Provan, Margaret May; Farlington.
Provan, Mattie M.; Farlington.
Pucket, Mildred Marguerite; Galena.
Purdy, Harry Glenn; Pittsburg.
Ralston, Pearl Jeffries, Elsmore.
Ramsey, Mary Elma; Fairview.
Reed, Bessie Velma; Girard.
Reed, Olive M.; *Liberal, Mo.*
Reeves, B. Pearl; Niotaze.
Reichart, Mother Thomas; Paola.
Rencenberger, William; Pittsburg.
Reno, Grace Isabel; Iola.
Reynolds, Ernest William; Fort Scott.
Reynolds, Roy Chester; Fort Scott.
Richardson, Mabel Claire; Parsons.
Ricketts, Mrs. Lulu Bean; Iola.
Rinker, Dottie; Mound Valley.
Riordan, Bridget Mary; Pittsburg.
Roberts, Irene Sinclair; Baxter Springs.
Robertson, Arepha Jaunita; Galena.
Robins, Lina L.; Pittsburg.
Robinson, Charlotte; Hutchinson.
Robinson, Leah Claire; *Joplin, Mo.*
Robley, Helen E.; Independence.
Rodenburg, Lydia Minnie; Kinsley.
Rogers, Geraldine; Olathe.
Rogers, Mary Evelyn; Louisburg.
Rogers, Rose Sybil; Pittsburg.
Romig, Ida V.; Coffeyville.
Rose, Georgia Mae; Leon.
Roseboon, Florence; Girard.
Roseboom, Martha Priscilla; Girard.
Ross, Ethel Casleman; Parsons.
Ross, Julia Irene Ruth; Oswego.
Rude, Hallie Frances; Parsons.
Runkle, Alma Melvina; Hiattville.
Rushing, Mrs. Mary W.; Hutchinson.
Sampica, Mary Harriet; Columbus.
Sanford, Nettie; Olathe.
Schauer, Elizabeth; Radley.
Schellack, Bessie; Galena.
Schneider, Hallie; Asbury.
Schreiner, Eulalia; Columbus.
Scott, Mrs. Florence H K.; Kirwin.
Selanders, Fanny; Waverly.
Self, Verna Ray; Havana.
Seymour, Helen; Pittsburg.
Shannon, Gladys Amelia; Chautauqua.
Shaw, Josephine; La Cygne.
Sheffield, John Patterson; Arcadia.
Shelley, Clair William; Kansas City.
Shenk, Noah H.; Mulberry.
Sherwood, Viola May; Coffeyville.
Shoemaker, Maud Brighton; Independence.
Shirron, Beulah Eleanora; *Webb City, Mo.*
Sholtz, Edward F.; Pittsburg.
Shultz, Nellie; Eureka.
Small, Marion; Savonburg.
Smiley, Fannie May; Pittsburg.
Smith, Edna Margaret; Galena.
Smith, Helen Jane; Pittsburg.
Smith, Mrs. Helene Edmunds; Chetopa.
Smith, Hester Alice; Independence.
Smith, Mary Alpha; Chanute.
Smith, Vera Irene; Burden.
Smither, Reba Elizabeth; Pittsburg.
Smock, Leeanna Jewell; Galena.
Snider, Alta; Savonburg.
Snider, Ruth Ellen; Savonburg.
Snyder, Mrs. Clarice P.; Hutchinson.
Snyder, Inez M.; Parsons.
Sowder, Mrs. Esther Brown; Galena.
Spaid, Charles Lewis; *Joplin, Mo.*
Sprenger, Alice M.; St. Paul.
Spencer, Bertha A.; *Carthage, Mo.*
Starchich, Grace Marion;* Mulberry.
Stevens, Mary D.; Fort Scott.
Stice, Daisy Blanche; Sublette.
Stiles, Ethel; Mulberry.
Stillwaugh, James Andrew; Galena.
Stonecipher, Ernest E.; Galena.
Streng, Edna Edith; Columbus.
Stump, Lillian O.; Dodge City.
Sullivan, Sr. Mary Callista; Fort Scott.
Summerfield, Lena Rose; *Joplin, Mo.*
Swartz, Mary A.; Hutchinson.
Swigart, Mildred; Pittsburg.
Tabor, Ella Louise; Girard.
Taylor, Etha; *Webb City, Mo.*
Taylor, Leona Irene; Dearing.
Taylor, Pearl Etta; Independence.
Taylor, Roy E.; Ottawa.
Teresa, Sister Mary; *Bartlesville, Okla.*
Teter, Ruby Evelyn; Alba.
Thomas, Eva Pearl; Pittsburg.
Thompson, Hazel E.; Parsons.
Thomson, Ethel Mary; Girard.
Thornton, Edith Alice; Pittsburg.
Thudium, Medie David; Galena.
Timmons, Leith; Pittsburg.
Tincher, Cleona; Fort Scott.
Todd, Edith Iantha; Coffeyville.
Tomlinson, John R.; Independence.
Tompkins, Ruth Anne; Chetopa.
Torr, Mrs. Maggie Belle; *Joplin, Mo.*
Torrance, Mary; Independence.
Towel, John Foster; Elsmore.
Townsend, Lena Elsie; Girard.
Townsend, Sue; Girard.
Traylor, Flora Elizabeth; Baxter.
Trible, Blanche Leona; Independence.
Tucker, Augusta May; Girard.
Tuerk, Mrs. Mollie C.; *Joplin, Mo.*
Turrill, Coral Mary; Weir.
Twente, Mrs. Petrea Newcomer; Baxter Spgs.
Tyler, May Elizabeth; *Joplin, Mo.*
Underhill, Nettie B.; Independence.
Upham, Harriet Rebecca; Boicourt.
Utley, Delores Rosebud; Grenola.
Van Vleck, Winona E.; Girard.
Vessadine, Anita G.; Mulberry.
Vogenitz, Mrs. May H.; Hutchinson.
Waddle, Mabel Viola; Independence.
Wade, Isabel; *Joplin, Mo.*
Wahl, Ethel Mary; Havana.
Waite, Fannie; Columbus.
Walker, Edith Lottie; Galena.
Walker, Nellie Vivian; Pittsburg.
Wallace, NeVella Jeannette; Pittsburg.
Walters, Nellie Myrtle; Iola.
Watts, Clara Ellen; Chetopa.
Ward, Lora Isabella; Caney.
Wasem, Frieda A.; Girard.
Wasem, Grace Anna; Girard.
Webb, Lela Maude; Galena.
Welch, Louetta Carmon; Pittsburg.
Whitaker, Gladys; Pittsburg.
White, Florence; Weir.
White, Kathleen Mary; Pleasanton.
Whitmer, Viola Mae; Longton.
Whittaker, Warren G.; Coffeyville.
Wikoff, Leo Charles; Hutchinson.
Willard, Mabel Grace; Arcadia.
Williams, Delsie Elizabeth; *Hiddenite, N. C.*
Williams, Hazel Alice; *Joplin, Mo.*
Williams, Lizzie N.; Peru.

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* Deceased.

CORRESPONDENCE-EXTENSION STUDENTS—CONTINUED.

Wimp, Marguerite; Pittsburg.
Winchester, Edith Belle; *Everett, Wash.*
Winter, Katherine; *Webb City, Mo.*
Wise, H. A.; *Joplin, Mo.*
Wise, Verna B.; Louisburg.
Wixon, Emma; Columbus.
Wogaher, Betha Alberta; Fort Scott.
Wohlford, Olive May; Harper.
Woodbury, Katherine; *Joplin, Mo.*
Woodbury, Ruby; *Joplin, Mo.*
Woodworth, Cora; Walnut.
Wrestler, Ferna E.; Walnut.
Wright, Faye Gladys; Weir.
Wright, Hazel; Weir.
Wright, Ruby Marie; Weir.
Young, Fern Rachel; Coffeyville.
Young, Hattie E.; Galena.
Young, Minnie Ethel; Galena.
Zimmerman, Ruby C.; Hutchinson.

TRADE AND INDUSTRIAL EXTENSION.

Akins, Blanche Estelle; Pittsburg.
Arkle, John W.; Frontenac.
Armstrong, Basil; Pittsburg.
Barker, Roy E.; Pittsburg.
Barlow, Mike Emil; Pittsburg.
Bennington, Wesley William; Pittsburg.
Bork, Laurence C.; Pittsburg.
Bourland, Arthur; Pittsburg.
Bowen, Charles W.; Pittsburg.
Brady, John; Pittsburg.
Bray, Crystal Marie; Pittsburg.
Brunskill, Edward; Weir.
Buffo, Louis; Frontenac.
Cann, John; Pittsburg.
Carmel, L. J.; Chicopee.
Clark, Milton; Frontenac.
Clark, Roy Everett; Pittsburg.
Coman, Blanche C.; Pittsburg.
Coman, William James; Pittsburg.
Conyers, Harry; Pittsburg.
Cox, James; Pittsburg.
Cummins, George E.; Pittsburg.
Cunningham, Vera May; Pittsburg.
Curteman, Marven Jack; Pittsburg.
DeArmond, Ernest Glenn; Pittsburg.
Derby, John; Frontenac.
Deruy, M. E.; Pittsburg.
Dittman, Gus; Frontenac.
Dockhot, Louis; Pittsburg.
Doucey, Emile; Pittsburg.
Druart, Andrew Emile; Frontenac.
Duncan, James E.; Pittsburg.
Edwards, Charles Wyatt; Pittsburg.
Exley, Grover; Pittsburg.
Falletti, Peter; Pittsburg.
Farrington, Gibert; Frontenac.
Farrington, William Burnerd; Pittsburg.
Fisher, Carl; Pittsburg.
Fogliasso, Domenic; Pittsburg.
Ford, Mary E.; Mulberry.
Fox, W. S.; Frontenac.
Frakes, Fred; Pittsburg.
Gable, Louis Frontana; Pittsburg.
Bodberry, Riley; Pittsburg.
Gallet, Charles H.; Pittsburg.
Gallet, Frank Paul; Pittsburg.
Garrison, Howard J.; Pittsburg.
Gatti, Price; Frontenac.
Gay, Edward W.; Pittsburg.
Gesslein, Raymond; Frontenac.
Graves, Jess Alvin; Pittsburg.
Hand, Frank James; Pittsburg.
Hathaway; Jess E.; Arma.
Henney, Arthur; Pittsburg.
Henney, William Earl; Pittsburg.
Hennigh, Base Harvey; Pittsburg.
Hillman, Fred William; Pittsburg.
Holman, Jim H.; Pittsburg.
Horton, Lee David; Pittsburg.
Huckabay, Lena Lee; Pittsburg.
Huffman, William M.; Pittsburg.
Hutchens, Roberta Adele; Pittsburg.
Johnson, Leslie Richard; Frontenac.
Jones, Cass L.; Pittsburg.
Kallenberger, Clarence Earl; Edna.
King, Paul D.; Pittsburg.
Laforte, Henry; Frontenac.
Lamb, L. D.; Frontenac.
Langston, G. T.; *Joplin Mo.*
Lutes, Henry William; Pittsburg.
Lutes, Jesse Frank; Pittsburg.
McCabe, Robert John; Pittsburg.
McCall, Charles J.; Pittsburg.
McQuire, Hugh A.; Pittsburg.
Maddock, Willie; Frontenac.
Manescalcky, James; Pittsburg.
Manescalki, Sabateus; Capaldo.
Manning, Edward J.; Pittsburg.
Matson, Charles E.; Pittsburg.
Moore, Otto E.; Pittsburg.
Morel, Emile Leon; Frontenac.
Mossom, Archie; Frontenac.
Murphy, Ellen Delphine; Franklin.
Myers, Harry; Pittsburg.
Nifong, Forrest; Pittsburg.
Nobile, Louis; Pittsburg.
Nobile, Pete D.; Pittsburg.
Otten, Alvin William; Pittsburg.
Pieters, Leon; Radley.
Plays, Charles F.; Pittsburg.
Pole, S. J.; Pittsburg.
Purdy, Harry Glenn; Pittsburg.
Reese, De Witt; Pittsburg.
Riordan, Thomas Dennis Patrick; Pittsburg.
Rose, Ralph; Pittsburg.
Robson, William Elliott; Pittsburg.
Rogers, Jesse Clarence; Pittsburg.
Ross, Carl Vinton; Pittsburg.
Rotterman, Marino; Chicopee.
Roy, Frank E.; Pittsburg.
Rugel, Frank; Pittsburg.
Smith, J. D.; Pittsburg.
Starbuck, Clara; Pittsburg.
Steffens, Claus Henry; Pittsburg.
Stickel, Charles Lewis; Pittsburg.
Stocking, Gladys Anna; Pittsburg.
Story, George Millard; Pittsburg.
Sullivan, Harry James; Pittsburg.
Svaldi, Joe; Chicopee.
Taylor, Clifford Marion; Pittsburg.
Torbett, Robert Emmet; Arma.
Uhles, Michael B.; Pittsburg.
Utz, John Frank; Pittsburg.
Variot, Sam Alex; Pittsburg.
Walker, William; Pittsburg.
White, George Henry; Arma.
Williams, Adah Hazel; Pittsburg.
Williams, Gwen; Pittsburg.
Wilson, Verner Leroy; Pittsburg.
Wolfe, Juel Morris; Pittsburg.
Wood, Bertha; Pittsburg.
Yartz, Louis; Frontenac.

S. A. T. C. SERGEANTS.

Doughman, Lisle L.; Mound Valley.
Galpine, Joseph Henry; *Asbury, Mo.*
Grabske, Paul Raymond; Rosedale.
Hinkle, Ernest Ralph; Peru.
Ringle, Lloyd Clinton; Pittsburg.
Roach, George Edwards; Winfield.
Scott, Floyd LeRoy; Greenleaf.
Smith, Lowell Everett; Independence.
Spurgeon, Tristan Lee Roy; Kansas City.
Wells, George; Cedarvale.

S. A. T. C. STUDENTS.

Allman, John Orlo; Boicourt.
Archer, Ralph Harvey; Iola.
Barnett, Raymond Rogers; Winfield.
Barrow, Frank; Weir.
Bevans, Dee; Mulberry.
Black, Ben Clayton; *Joplin, Mo.*
Blackstum, Melvin Clyde; Neodesha.
Bogartz, Earl Leonard; *Minden, Mo.*
Boone, Daniel; Colony.
Bowens, Adolph Burner; *Guthrie, Okla.*
Bowles, Fred Virgil; Walnut.
Bowman, John William; Caney.
Braden, Gail Samuel; Humbolt.
Brandenburg, Merrill Francis; Pittsburg.
Breivogel, Walter Arlow; Pittsburg.
Brock, Joe Nelson; Altamont.
Brooks, Robert Dale; Larned.
Brown, Dewey Wheeler; Dexter.
Brown, Everett Stanley; Winfield.
Boyd, Arthur Gilmore; Moran.
Bryant, Homer Layfette; Galena.
Bryner, Ralph Mansfield; Altamont.
Buck, Willis Adelbert; Cherokee.
Burgess, Clyde Cecil; *Joplin, Mo.*
Callahan, James Michael; Scammon.
Cameron, Lloyd; Caney.
Campbell, Elma Lysle; Pittsburg.
Casazza, Joe M.; Pittsburg.
Cassell, George Wesley; Fort Scott.
Chadsey, William Lloyd; Cherokee.
Chase, Hubert B.; Pittsburg.
Clark, Raymond Dean; Ottawa.
Claxton, Clarence Claten; Oswego.
Conrad, Ben K.; Pittsburg.
Conrad, Eddie Marion; Pittsburg.
Copenhaver, Jesse Roy; McCune.
Crosswhite, Albert Edmund; Parker.
Cumiskey, Edwin Frank; Pittsburg.
Davidson, Harold; Mulberry.
Davidson, Joseph Leonard; Peru.
Delander, Ruben John; Kinsley.
DeLong, Earl Dyer; Chautauqua.
Derby, William Patrick; Frontenac.
Dewar, Cyrus T.; *Kansas City, Mo.*
Diamond, Charles Allan; Columbus.
Dienst, Eugene Stanley; Coffeyville.
Dolson, Robert Hoyt; *Joplin, Mo.*
Dorsey, Arthur Milton; Weir.
Doty, Jack; Pittsburg.
Drew, Joseph Elsworth; Pittsburg.
Dunbar, Robert; Weir.
Dunlap, Ferdinand Guy; Neodesha.
Early, Irvin; Mulberry.
Eaton, Charles Henry; Weir.
Ecord, Estell Benjamin; Chanute.
Edwards, Robert Lee; Garden City.
Eldridge, Everett Ernest; Erie.
Farris, Jesse Sangster; *Joplin, Mo.*
Felty, Floyd Cecil; *Liberal, Mo.*
Filkel, Ira Loyd; Pittsburg.
Finley, Glenn O.; Fort Scott.
Fithian, James Allan; Baxter.
Fischer, Joe Christopher; Wichita.
Foster, Glenn Ammerman; Iola.
Fowler, Russell Neff; Eldorado.
Franklin, M. H.; *Guthrie, Okla.*
Friend, John Willis; Wellington.
Funk, Leslie Orville; Thayer.
Garnand, Ivan D.; Garden City.
Geckeler, Louis Samuel; Independence.
Gilbert, Alva Richard; Pittsburg.
Gilmour, Robert Montgomery; Pittsburg.
Glidewell, Forrest; *Liberal, Mo.*
Grandle, Alfred Willis; McCune.
Grant, Thomas Hale; Altamont.
Green, Finis McGrady; Moline.
Greenfield, Robert Aaron; McCune.
Harryman, G. F.; Hepler.
Hackleman, Frederick Earl; Chetopa.
Heinlein, M. S.; Frontenac.
Herrick, Donald Myron; Hutchinson.
Hill, Harold Dewitt; Ottawa.
Hinkle, Carl Damon; Caney.
Holman, Harry Eugene; Mulberry.
Holt, Floyd Milford; Smithfield.
Hood, William Archibald; Pittsburg.
Hoover, Bryan Ralph; Neodesha.
Horn, Louis Gerald; Wichita.
Houdashelt, Henry Asbury; Walnut.
Hudiburg, Leo Everett; Independence.
Jarrett, Walter Elwood; *Joplin, Mo.*
Jeffers, Sherman Elmo;* *Baylis, Ill.*
Jenkins, Harry Earl; Mulberry.
Johnson, Richard Melvin; Pittsburg.
Johnston, George Eldorado; Peru.
Jones, Cecil LeRoy; Moline.
Jones, Simon W.; Hutchinson.
Kappleman, Henry Frank; Clay Center.
Keating, Thomas Edward; Fulton.
Kelley, Floyd Neoma; Iola.
Kelley, Harold Ray; Iola.
Kennedy, John Douglas; Fulton.
Kennedy, William Scott; Mulberry.
Kensinger, Harleigh Bernard; Walnut.
Kerwood, Ira Fedrick; Iola.
Kilduff, James Leo; Pittsburg.
Kimbrough, Glenn Cecil; Chanute.
Koontz, J. L.; *Joplin, Mo.*
Kyser, Charles Raymond; Pittsburg.
Lackey, Prentice Caldwell; *Watts, Okla.*
Laing, Bry Herbert; Cherokee.
Laizure, Floyd, Anderson; Columbus.
Lampton, Walter Dean; Cherokee.
Lane, James Alfred; *Bartlesville, Okla.*
Leisure, Brady; *Carl Junction, Mo.*
Lemert, Merl Locke; Cedarvale.
Lemon, Robert Sheldon; Pittsburg.
Lenski, Joe August; Pittsburg.
Leonard, Ernest Harold; Cedarvale.
Lozier, Thomas Loyd; Edna.
McCabe, Claud Ezra; Coffeyville.
McCann, O. E.; Sedan.
McCool, William Dana; Opolis.
McCormick, Patrick Carl; Pittsburg.
McCune, George J.; Chanute.
McKee, Earl Henry; *Guthrie, Okla.*
McWilliams, Kenneth Ryburn; Girard.
MaGee, Dayton William; Independence.
Malcolm, George Robert; Pittsburg.
Mannoni, Socrates Alfonse; Frontenac.
Martinson, Merriel Leon; Arcadia.
Matthews, Jesse Walton; Pittsburg.
Matthews, Robley; Pittsburg.
Meade, Ralph Merle; Dexter.
Meeker, Gwynne Emerson; Wichita.
Mendenhall, Roscoe Lee; Chanute.
Menichetti, Americus; Frontenac.
Minshall, Hazelton; Baxter.
Mitchell, Raymond Ernest; *Gentry, Ark.*

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* Deceased.

S. A. T. C. STUDENTS—CONTINUED.

Moffatt, John Warren; Pittsburg.
Morton, Wilford Elmer; Chanute.
Moyer, Floyd Huber; Columbus.
Mueller, Truman Paul; Wichita.
Mullikin, Earl John; Pittsburg.
Murphy, Riley Harold; Great Bend.
Niebarger, Clyde Benjamin; Topeka.
Newton, Albert Max; *Minden Mines, Mo.*
Nickels, Elmer Maynard; Colony.
Olson, Glenn Earl; Galesburg.
Orr, Frederick Lyford; Peru.
Ott, John Lewis; Kinsley.
Owens, Addisen D.; Parsons.
Parker, Ralph Alonzo; Erie.
Parsons, Harland Houston; Savonburg.
Patrick, Boyd Middleton; Columbus.
Perry, Raymond Alfred; Stillwell.
Pottenger, John R.; Pittsburg.
Potter, Harold V.; Fort Scott.
Pucci, Zeno Joseph; *Kan. City, Mo.*
Pulliam, Colin Locke; *Watts, Okla.*
Pulliam, Loren Reid; *Watts, Okla.*
Pyle, Leo Deets; Farlington.
Rauch, Dewey Fenis; Galena.
Reilly, William Patrick; Chanute.
Reno, Marion Alfred; Scammon.
Riker, Earl George; Columbus.
Ringle, Howard Jewett; Independence.
Ringle, Lloyd Clinton; Pittsburg.
Robison, Arthur Ward; Chetopa.
Rouse, Clyde Spalding; Chetopa.
Ryan, Dennis Owen; Galena.
Ryan, Richard Morgan; Pittsburg.
Saccanne, Guido Herbert; Ringo.
Schaubel, LeRoy Herbert; Clay Center.
Schirard, Arthur; Mulberry.
Schwab, John William; Pittsburg.
Scott, Everett Ernest; Weir.
Scott, George Olin; Colony.
Shobe, James Edison; Chautauqua.
Shreffler, Boyd LaVerne; Topeka.
Sifers, Samuel Iva; Iola.
Simmons, Clement Francis; Hutchinson.
Simone, James; Weir.
Smith, Glenn Francis; Girard.
Smith, James William; *Carl Junction, Mo.*
Smith, Rex; Pittsburg.
Smith, Ward Perry; *Blockton, Iowa.*
Snyder, Harold Allen; Iola.
Souders, Carvel Olson; Eureka.
Sparks, Joseph Wesley; *Joplin, Mo.*
Sparks, Paul Chesley; *Joplin, Mo.*
Spicer, Hubert Cecil; Pittsburg.
Stewart, Cecil LeRoy; Winfield.
Stone, George Fenton; *Caddo, Okla.*
Storey, John Robson; *Carl Junction, Mo.*
Stratford, Clark Oliver; Eldorado.
Sullivan, Albert Kay; Parker.
Tanner, Myron Thomas; Wichita.
Taylor, Horace Elmer; Cherokee.
Tewell, Warren Buxton; Fort Scott.
Thompson, Charles Jasper; Walton.
Thompson, Grover Dellison; Parker.
Thompson, Jesse Lee; Parker.
Timberlake, Harry Arnold; Quenemo.
Tourtelot, Dale F.; *Joplin, Mo.*
Tout, Chester I. Long; Cedarvale.
Trabue, F. B.; McCune.
Turner, Chester Sidney; Eldorado.
Uhles, Clell Michael; Pittsburg.
Utley, Lloyd Ashford; Chetopa.
Veerkamp, William Bryan; Neosho.
Vietti, Frank; Pittsburg.
Walker, John Raymond; Pittsburg.
Waltz, William Benjamin; Pittsburg.
Ward, Morris Arnold; Altamont.
Webb, Richard Joseph; McCune.
Wells, George; Cedarvale.
Wells, Virgil Leon; Pittsburg.
Welty, Harold Gibson; Walnut.
Wickware, John Hale; Pittsburg.
Wiedenmann, John Charles; Hepler.
Wilkinson, Cecil; Weir.
Willard, Ted Morris; Cherokee.
Williams, William Lee; Pittsburg.
Williamson, Edward T.; Iola.
Wilson, Albert Dewey; Weir.
Wilson, John Benjamin; Opolis.
Wimmer, Gordon Thomas; Valeda.
Wischer, Alva Lewis; Parsons.
Wolfe, Thomas Walkup; *Copan, Okla.*
Wolleson, Fitshugh Lee; Pittsburg.
Wolleson, Harold Adolph; Pittsburg.
Wright, Harry Samuel; Coffeyville.
Wright, Kenneth Lewis; Iola.
Young, Clyde Haven; Moran.
Zimmerman, Howard Mark; Columbus.

HIGH SCHOOL SENIORS.

Avery, Goldie E; Pittsburg.
Bean, Lewis Augustus; Pittsburg.
Belton, Esther C.; Herington.
Bennett, Esther; Pittsburg.
Bigley, Lorena Phaye; Girard.
Blackett, Faye Ruth; Girard.
Blemker, Nannette Mae; Pittsburg.
Bookman, Gladys Lucille; *Maryville, Mo.*
Broyles, Aaron E.; Pittsburg.
Bunch, Lula Mae; Galena.
Cann, Harriet Winifred; Pittsburg.
Chambers, Zena Tyer; Hepler.
Chitwood, Josephine Lucile; *Carl Jct., Mo.*
Demon, Nellie Leona; Pittsburg.
Dolson, Kathreen; McCune.
Eller, Frances Anna; Carona.
Flint, Porter Griffin; Girard.
Flynn, Nellie Regina; Pittsburg.
Frame, Mary Cyrene; McCune.
Geer, Leah Elsie; *Oronogo, Mo.*
Graves Eleanor Virginia;* *Asbury, Mo.*
Guenther, Keith James; Pittsburg.
Hankins, Ruby Grace; Chetopa.
Herron, Mabel Esther; Pittsburg.
Hope, Mary Beth; Pittsburg.
Hope, Mary Beth; Pittsburg.
Howard, Henry; Goodman.
Hunt, Katherine Regina; Frontenac.
Johnson, Norman Henry; *Ashbury, Mo.*
Keating, Helen M.; Fulton.
Klock, Warren; Farlington.
Knopp, Florence Grace; Hepler.
Krieckhaus, Harriet Katherine; *Webb City, Mo.*
Laird, Wallace Arvin; Ottawa.
Lamance, Wayne Harold; Thayer.
Lamborne, Sarah Gladys; Pittsburg.
Landers, Georgia M.; Hepler.
Lewis, Marie; Opolis.
Ludlow, Ethel Bly; Pittsburg.
Lynn, Helen Hope; Redfield.
McCray, John Herman; Pittsburg.
McFadyen, Lillian Maude; Frontenac.
McFerron, Ella Fraces; Lawton.
Mallams, La Roy; Weir.
Marsh, Edith Katherine; Pittsburg.
May, Faye Fanny; Pittsburg.
Mendenhall, Robert Miller; Pittsburg.
Michelas, Clementine; Frontenac.
Mitchell, Thelma Lois; Frontenac.
Monahan, Agnes Ann; Frontenac.
Morgan, Mary Delphine; Frontenac.

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* Deceased.

HIGH SCHOOL SENIORS—CONTINUED.

Morton, Euetta Rose; Pittsburg.
Myers, Hattie Esther; Cherokee.
Myers, Jewell Evangeline; Weir.
O'Donnell, Rose Mary; Frontenac.
Pease, Ruth Theodore; Pittsburg.
Polec, Marguerite Virginia; Pittsburg.
Renfro, Grace E.; *Brighton, Colo.*
Roe, Harold Le Roy; Pittsburg.
Rutenber, Robert Terry; *Kan. City, Kan.*
Schneider, Jewell Mildred; *Asbury, Mo.*
Schooley, Helen Mae; Pittsburg.
Seeley, Daniel Max; Topeka.
Sipes, Gladys; Pittsburg.
Snyder, Emma Kathleen; Pittsburg.
Tanquary, Emma Blendena; Independence.
Taylor, Dee Eva; Arcadia.
Taylor, John Irven; Pittsburg.
Underhill, William Russell; McCune.
Walters, Clyde; Arma.
Watson, Christena Judea; Weir.
Webber, Rozena G.; *Boley, Okla.*
Weir, Bertie Thelma; Pittsburg.
White, Helen Templeton; Weir.
Wiman, Virginia LaVon; Pittsburg.
Witter, Clyde; *Ashbury, Mo.*
Yartz, Mayme Christine; Frontenac.

HIGH SCHOOL JUNIORS.

Arnado, Esther Amelia; Pittsburg.
Bailey, Delight Rosetta; Hepler.
Beecher, Phyllis Ellen; Pittsburg.
Brown, Mamie Lucille; Pittsburg.
Brumbarger, Flora Mae; Arcadia.
Buckle, Gordon James; McCune.
Calhoun, Maurine Mae; Pittsburg.
Carson, Christine; Pittsburg.
Chandler, Charles Earl; Kincaid.
Chew, Anna Mae; Pittsburg.
Church, Edythe Louise; Pittsburg.
Comer, Olive Deane; Pittsburg.
Demmon, Leroy Allen; Pittsburg.
Dickson, Walter Belton; Quenemo.
Downing, John Lester; Pittsburg.
Draper, Edith Olive; Pittsburg.
Duffy, William Patrick; Pittsburg.
Early, Dorothea; Frontenac.
Elder, Adaline Leith; Pittsburg.
Endicott, Charles Lafayette; Pittsburg.
Evans, Edward Lloyd; *Carl Junction, Mo.*
Flagg, Darlene Hazel; Pittsburg.
Fox, Doris Mae; Mulberry.
Frazer, Mary Louise; Mulberry.
Gerken, Georgene Leigh; Girard.
Gillenwaters, J. Marie; Pittsburg.
Graham, Margaret; Pittsburg.
Gray, Jane Sherwood; Weir.
Gregory, Glenn Felix; Pittsburg.
Hackney, Mrs. A. B.; Pittsburg.
Hargrove, Mabel Ellene; Wilmore.
Harpole, Frances; Opolis.
Harvey, Myrtle; McCune.
Higgins, Ellen Josephine; Chicopee.
Hisle, James Richard; Pittsburg.
Holm, John William; Topeka.
Hopper, Eva Irene; Arcadia.
Housel, Mavis Victoria; Pittsburg.
Houston, Cecil Decatur; *Carl Jct., Mo.*
Hugo, Mabel Dorothy; Wellington.
Iserman, Ruth Lilian; Pittsburg.
Jameson, Florence Celesta; Pittsburg.
Janes, Hazel Lee Farlington.
Johnson, Kathryn I.; Pittsburg.
Justice, Mildred Claire; Chetopa.
Killough, Elsie Louise; Pittsburg.
Kincaid, Cecil Walter; Pittsburg.
Kirkpartick, Forrest Clement; Murdock.
Koopman, Frederick Lewis; Pittsburg.
Lance, Mary Alice; Pittsburg.
Lapworth, Josephine Winnifred; Pittsburg.
Largent, Christel Pearl; *Jane, Mo.*
Lewis, Victor John; Opolis.
Linthicum, Kathryn Christine; Pittsburg.
Logan, Harold A.; Williamsburg.
McCabe, Claude Ezra; Coffeyville.
McClorey, William Alfred; Chanute.
McCoy, Alene Lynn; Pittsburg.
McKinley, Lysle Branard; Pittsburg.
Major, Sarah Jones; Pittsburg.
Mason, Agnes Grace; Fulton.
Mathes, Fern Cleone; Pittsburg.
Matter, Leman Cecil; Weir.
Matthews, Ollie; Pittsburg.
Mendenhall, Richard Charles; La Cygne.
Monohan, Euphemia Regina; Frontenac.
Moore, Marcetta; Pittsburg.
Mudd, Hulett Vance; Pittsburg.
Murray, Katherine Evelyn; Holton.
Nelson, Viola; Pittsburg.
Nicholson, Demmon R.; Girard.
O'Connell, Margaret Lonetta; Columbus.
Owens, Marie; St. Paul.
Pahlow, Hanna; *Lamar, Mo.*
Park, Allen Tom; *Ashdown, Ark.*
Peak, Lula May; Walnut.
Pearson, Ruth Elvira; Edna.
Piper, Harvey Dennis; Murdock.
Price, Robert Corban; Pittsburg.
Quanton, Thomas Carr; Scammon.
Reynolds, Ray Chester; Fort Scott.
Rickey, Lillian; Mulberry.
Rogers, Jim; Pittsburg.
Roseberry, Edith Marie; St. Paul.
Scott, Lorene; Weir.
Scott, Mary Katherine; McCune.
Scott, Verna Viola; Weir.
Severns, Effie Clare; Pittsburg.
Sherwood, Edna Pearl; Pittsburg.
Smith, Annetta Lee; *Sarcoxie, Mo.*
Smith, L. Louise; Pittsburg.
Smith, Opal L.; Pittsburg.
Spalding, Melville Homer; Neodesha.
Strong, Charles Henry; Pittsburg.
Sweeney, Ethel Isabell; Pittsburg.
Timberlake, Harvey Arnold; Quenemo.
Utz, Theodore; Frontenac.
Ware, Seth; Pittsburg.
Washington, Cecil; *Seguin, Tex.*
Webb, Earl Harold; Chanute.
Wilson, Gay Lind; Opolis.
Wilson Madgelyn; McCune.
Wright, Naomi Dorothy; Pittsburg.
Young, Edna Josephine; Pittsburg.
Young, Esther Rose; Pittsburg.
Yowell, John Calvin; Geneva.

HIGH SCHOOL SOPHOMORES.

Alexander, William; Pittsburg.
Andrew, Harry Robert; Girard.
Bechdoldt, Flossie Ruth Agnes; *Asbury, Mo.*
Bennett, Emerson Otho; Pittsburg.
Benton, Hazel Madeline; Pittsburg.
Billington, Pauline Bertha; Pittsburg.
Bishop, Lola May; Pittsburg.
Boss, Clifford Phelps; Pittsburg.
Bournonville, Harold Edward; Pittsburg.
Brandenburg, Harold Penfield; Pittsburg.
Brower, Esther Marguerite; Pittsburg.
Brown, Harlie Lee; Peru.
Brown, Minnie; Peru.
Bunney, Helen; Pittsburg.

HIGH SCHOOL SOPHOMORES—CONTINUED.

Carder, Mildred Larue; Pittsburg.
Carlton, Laura Etta; Edna.
Cavanaugh, Rachel Elizabeth; Mulberry.
Cavanaugh, William Dennis; Pittsburg.
Clark, Elizabeth Mary; Pittsburg
Cleman, William Harold; *Albany, Mo.*
Cogswell, William F.; Pittsburg.
Coleman, William Harold; *Asbury, Mo.*
Cook, Joe George; Girard.
Cropper, Thelma Fern; Pittsburg.
Cummins, Nadine Marie; Pittsburg.
Cunningham, Charles Raymond; Englevale.
Davis, Edgar Harold; Girard.
Davis, Lavon Winnithe; Pittsburg.
Denney, Cecila A.; Pittsburg.
Dillman, Lawrence William; Pittsburg.
Doring, Gertrude; Pittsburg.
Downing, Lavon; Pittsburg.
Eakin, Ralph Marion; Weir.
Echelberger, George Everett; Mulberry.
Endicott, Lucy N.; Arcadia.
Farmer, Alta May; Arcadia.
Ferns, Mary Catherine; Scammon.
Frakes, Ruby Marie; Opolis.
Franco, Jennie Zena; Franklin.
Fulkerson, Irma; Pittsburg.
Geary, Mae Jaunita; Pittsburg.
Geary, Mae Reve; Pittsburg.
GenDusa, Joe; Pittsburg.
Gieselman, Eunice Clara; Pittsburg.
Gilbreath, Jim; Pittsburg.
Goldsmith, Hazel Correne; Bartlett.
Goodwin, Edward; Coffeyville.
Graves, Goldie Alta; *Asbury, Mo.*
Graves, William B.; *Asbury, Mo.*
Hackney, Lena; Pittsburg.
Harmon, Bryan Milton; Arcadia.
Harrigan, Evelyn Marie; Scammon.
Hayden, Velma Clarissa; Pittsburg.
Hinman, A. Marie; Opolis.
Hisey, Charles Lee; Pittsburg.
Hobson, Arthur Roy; Pittsburg.
Hopper, Vera Helen; Pittsburg.
Houston, Nadine; Pittsburg.
Huffman, Harold Clarence; Pittsburg.
Hull, Frances Purla; Pttsburg.
Jenkins, Louise Frances; Pittsburg.
Jones, Chester Grant; Colony.
Jones, Nina Helen; Pittsburg.
Justice, Cleitha Ellarene; Pittsburg.
Keller, Sam Lyde; Yale.
Kelly, Alice; Frontenac.
King, Ruth Edith; Pittsburg.
Kitterman, M. Ethel; Longton.
Koopman, Emma Marie; Pittsburg.
Laney, Lorene Niles; Pittsburg.
Lynd, Thelma Cora; Parsons.
McClure, Letha Marie; Opolis.
McKaig, Maddene; Eldorado.
McKelvy, Florence Franklin; Pittsburg.
Mansfield, Mary Agnes; Pittsburg.
Marsh, Flora Jeannette; Pittsburg.
Mecum, Anna Ruth; Earlton.
Mendenhall, James Edgar; Pittsburg.
Meredith, Bernice Alta; Oxford.
Millard, Lloyd Jess; Pittsburg.
Mills, Otis Daniel; Cedarvale.
Mobley, Zahner Lee; Weir.
Montee, Teddie M.; Pittsburg.
More, Opal Mildred; Pittsburg.
Morgan, Isabel Josephine; Frontenac.
Moore, Sidney Sanford; Topeka.
Moore, Thelma Eugene; Pittsburg.
Morrison, Bart Lloyd; Monmouth.
Nance, Mattie Virginia; Pittsburg.
Neill, Dorothy Isabel; Erie.
Newman, Alma; Pittsburg.
Osterman, Hulda Clara; Sylvan Grove.
Palmer, Earl Ray; Topeka.
Pickering, Hildred; St. Paul.
Porphin, Louise C.; Pittsburg.
Raleigh, Johnnie Lee; Parsons.
Renfro, Raymond Reid; *Brighton, Colo.*
Rickenbrode, Clifford Dwight; Medora.
Robins, Leslie C.; Pittsburg.
Rondelli, Marino; Pittsburg.
Schadel, Jessie Rachel; Baxter Springs.
Schlichting, Hilda Katherina; Pittsburg.
Schwab, Charles Francis; Pittsburg.
Scott, Addie Rosella; Weir.
Shrader, Charles Albert; Topeka.
Simpson, Lois Margaret; Arcadia.
Skelton, Dale; Pittsburg.
Smith, Albert Seven; Hutchinson.
Spalding, John V.; Chanute.
Spencer, Kenneth A.; Pittsburg.
Stabler, Lula May; Niotaze.
Stickle, John; Weir.
Strickland, Eloise Ward; Independence.
Sweeney, Pearl Cecelia; Pittsburg.
Taylor, Camilla C.; Pittsburg.
Taylor, Millard Richard; Eldorado.
Thomas, Howard Stough; Baxter.
Thompson, Louis Elmo; Wichita.
Thornhill, Noel Ralph; Protection.
Trout, George Gilbert; Pittsburg.
Vivian, Mary Amelia; Pittsburg.
Walker, Florinne Marcella; Pittsburg.
Waskey, Helen; Pittsburg.
Webb, Mabel May; Pittsburg.
White, Dale Alonzo; Pittsburg.
White, Rachel Beatrice; Pittsburg.
Williamson, Oral Lola; Pittsburg.
Woods, Margaret; Pittsburg.
Worthington, Harry Vincent; Ottawa.
Wyatt, Lee Layton; Baxter.
Woodbury, Robert Arthur; Pittsburg.
Young, Edna Josephine; Chicopee.

HIGH SCHOOL FRESHMEN.

Aikins, Clarence Ellsworth; Sound Mound.
Albertson, Kate Elizabeth; Pittsburg.
Allen, Helen Inez; Pittsburg.
Allen, Ralph Edgar; Neodesha.
Allia, Marco; Mulberry.
Alumbaugh, Irma; Pittsburg.
Amiter, Robert Sherwood; Wichita.
Angel, Ethel May; West Mineral.
Asch, Charles Edward; Fort Scott.
Atkins, Irene; Pittsburg.
Aust, Oscar Earnest; Ellis.
Austin, Katie Drucila; Fulton.
Austin, Ruby Mary; Mulberry.
Baker, John Meredith; Pittsburg.
Ball, Orrie Hugh; Dennis.
Bateman, Earl Gusty; Eldorado.
Bateman, Mollie Edna; Opolis.
Beck, Merl Preston; Girard.
Beckman, Geneva Agnes; Pittsburg.
Bedenbender, Karl; Geneva.
Bell, Esther; Roseland.
Bell, John M.; Opolis.
Beltram, Dominic; Carona.
Biddle, John Pierce; Pittsburg.
Biddle, Saidee Margaret; Pittsburg.
Bishop, Viva Maude; Pittsburg.
Blailock, Frank Lyon; *Bartlesville, Okla.*
Boettjer, Mathilda; Brazilton.
Boice, Mrs. Sarah; Pittsburg.
Bowen, James Dowling; Pittsburg.
Britton, Vida Anna; Weir.
Broadlick, Charles Thomas; Pittsburg.
Brown, Lois; Pittsburg.
Buchanan, Clara Margaret; *Carthage, Mo.*
Bugbee, Katheryn Mayre; Pittsburg.
Call, Ellis Guy; Cedarvale.
Callin, Eugene Walker; Pittsburg.
Carl, Mrs. Addie; Mulberry.

HIGH SCHOOL FRESHMEN—CONTINUED.

Carmel, Lorenzo John; Chicopee.
Carpenter, Esther Lydia; Erie.
Cassin, Alma Viola; Girard.
Ceschi, Lucy; Mulberry.
Cheyne, Mary; Pittsburg.
Chubb, Burl C. Quentin; Baxter Springs.
Clements, Robert Russell; Topeka.
Clinton, Edna Lorraine, Pittsburg.
Clovinger, Mabel Nora; Cherryvale.
Cooper, Nettie Lillian; Girard.
Covell, Merle Oran; Pittsburg.
Croft, Jack Willie; Pittsburg.
Cropper, Agnes Nell; Pittsburg.
Crow, Francis Luther; Hutchinson.
Cunningham, James Earl; Carona.
Cunningham, Vera May; Pittsburg.
Cunningham, William Ellis; Independence.
Davis, Percy Lambert; Newton.
Davis, Edgar Harold; Girard.
Dawson, Bessie May; Englevale.
Demmon, Grace Lee; Pittsburg.
DeVore, Julian Frank; Chanute.
Dickinson, Mable Clair; *Minden Mines, Mo.*
Doyle, Alta L.; McCune.
Doyle, Sadie Agnes; McCune.
Driscoll, John Raymond; Chanute.
Dudgeon, Arthur Ellsworth; Cedarvale.
Duffy, Katherine; Pittsburg.
Duncan, Paul Franklin; Weir.
Durand, Calvert Alanson; Coffeyville.
Eaton, William Allen; Erie.
Edwards, Dean Royster; Pittsburg.
Edwards, Elmer Ellsworth; Eldorado.
Elliott, Lottie Irene; Pittsburg.
Endicott, Bertha Mae; Pittsburg.
Engelhardt, Heigh Sylvester; Winfield.
Evans, Albert Spencer; McCune.
Evans, Edward William; Erie.
Ewbank, James Parker; Buelah.
Falkenstein, Hattie Elizabeth; Pittsburg.
Fern, John Paul; Scammon.
Fern, Mary Elizabeth; Scammon.
Forbes, Joseph Floyd; Chanute.
Ford, Mack; *Liberal, Mo.*
Foster, Earl Raymond, Pittsburg.
Foudray, Orville Howard; Cedarvale.
Fox, William Jay; Chautauqua.
Freidline, George Adelbert; Caney.
Frieze, Clarence Ivan; Parsons.
Fuhrer, Mary Marthena; Pittsburg.
Fullhart, Robert Lee; Oswego.
Garrett, Henry Walker; Neodesha.
Garrison, Leyta Ellen; Pittsburg.
Geppelt, Emil, Jr.; Iola.
Gerhard, Ellen Emily; Girard.
Gilbert, Chester Claton; Pittsburg.
Godden, Frances; Caney.
Goodman, Byron Cecil; Mulberry.
Graham, Inez E.; Pittsburg.
Greene, Robert Kent; Mulberry.
Grieve, Russell Parks; Wichita.
Guffy, Gail Borden; Fort Scott.
Guffy, Porter; Fort Scott.
Hackney, Christine Thomas; Pittsburg.
Harbin, George Hampton; Oswego.
Hardendorf, Edward Dewey; Chanute.
Harkrader, Charles Ross; Sedan.
Harpole, Ralph; Opolis.
Harshfield, Sidney Clyde; Pittsburg.
Haynard, Louis Cleo; Parsons.
Heisey, Alva John; Galesburg.
Heller, Raymond Paul; Chanute.
Hendon, James Ross; Wellington.
Herbay, Joe Henry; West Mineral.
Hisle, Jessie Maurine; Pittsburg.
Hobbs, Alberta Herrick; Weir.
Hobson, Alva Richmond; Pittsburg.
Hodgden, Ruby Pearl; Erie.
Hoffman, Alonzo Samuel; Neodesha.
Holden, Hubert Charles; Pittsburg.
Holland, Elizabeth Blanch; Liberal.
Hudspeth, Richard Alexander; Topeka.
Ingels, Anson Benjamin: Larned.
Ingram, Dona Alice; Arcadia.
Johnson, Homer Jackson; Chanute.
Johnson, Nellie; *Asbury. Mo.*
Johnston, Dorris Mary; Englevale.
Johnston, John Wesley; *Minden Mines, Mo.*
Joyce, Charles I.; St. Paul.
Keaton, Rollin Madison; Pittsburg.
Kennedy, Eugene Wesley; Pittsburg.
Kennedy, Henry Franklin; Cedar Vale.
Kickel, Harold Frederick; Pittsburg.
Killough, Mary Elizabeth; Pittsburg.
Kime, Grace Leah; Pittsburg.
Kincaide, Zetta; Erie.
Klochr, Robert; Coffeyville.
Katzman, Elizabeth; Frontenac.
Knight, Eunice C.; Gardner.
Knoll, Margaret Mary; Pittsburg.
Lee, Glen William; Parsons.
Lewis, William N.; Opolis.
Libby, Lyla Marie; Weir.
Libouton, Jules; Girard.
Liepman, Margaret Sarah; Pittsburg.
Ligon, Floyd Lee; Pittsburg.
Limbocker, Paul Leslie; South Mound.
Lindberg, John Manley; Independence.
Lobek, Tony John; Franklin.
Lough, Vivian Beatrice; Pittsburg.
McColm, Leland; Cherokee.
McVicar, Paul Matthew; Wichita.
Maniez, Marcean; Pittsburg.
Marsh, Elizabeth Martha; Pittsburg.
Mason, Theodora Marguerite; Monmouth.
Matter, Lester Lyman; Weir.
Mattingly, Mary Velma; Erie.
May, Edgar Tice; Medora.
Mead, Ralph; Pittsburg.
Mendenhall, Ethelwyn; Pittsburg.
Mesamore, John Leslie; *Wilton, Ark.*
Meyer, Edward E.; Girard.
Miles, Lawrence Farmer; Wichita.
Moffitt, Wilbert Samuel; Peru.
Mordica, Bertha Victoria; Pittsburg.
Mordica, Blanche Victoria; Pittsburg.
Morgan, Harry; Pittsburg.
Morgan, Thelma Evalyn; Pittsburg.
Moore, Lawrence Earl; Elsmore.
Moore, Pearl Della; Pittsburg.
Morrison, John Alfred; *Mutual, Okla.*
Myers, Austin; Kimball.
Nightingale, Mollie; Pittsburg.
Norris, Daisy Agnes; Opolis.
Norwood, Margaret Maud; *Clifty, Ark.*
Nottingham, Bessie Avis; Pittsburg.
Oberholtzer, Paul Albert; Independence.
O'Dell, Beulah Myrtle; *Asbury, Mo.*
Oldham, Ethel V.; Walnut.
Olson, Leroy Kindig; Galesburg.
Owens, Charles Vincent; Chanute.
Parkin, Ruth Irene; Breezy Hill.
Parks, Andrew Richard; Fort Scott.
Payne, William Phillip; Neodesha.
Peak, Alice Elizabeth; Walnut.
Piling, Anna Mary; Frontenac.
Pittinger, Grace Elaine; *Nashville, Mo.*
Plagens, George Max; Pittsburg.
Post, Lawrence Forrest; Glade.
Price, Mary Mildred; Mound Valley.
Rall, Lavon Bee; Pittsburg.
Ralston, Pearl; Elsmore.
Reinecke, John Ernest; Pittsburg.
Reizenstein, Melba; Pittsburg.
Roberts, Charles Thomas Addington; Chanute.
Robertson, Homer Smock; Parsons.
Roller, Mary Minerva; Weir.
Roseboom, Florence; Girard.

HIGH SCHOOL FRESHMEN—CONTINUED.

Ross, John Robert; Weir.
Rothwell, Ethelred; Croweburg.
Ruchaber, Joe Felix; Pittsburg.
Sanderson, Thelma Leona; Pittsburg.
Salisbury, Dewey William; Parsons.
Scalfi, Robert Albert; Mulberry.
Schlichting, Dora Anna; Pittsburg.
Schmuck, Lynn Hubert; Pittsburg.
Scott, Granville; McCune.
Scribner, Doris Daisy; Chanute.
Selle, Christine; Walnut.
Sharp, Frank B.; Olathe.
Sharp, Glen; Girard.
Sharp, Vaneta Lee; Pittsburg.
Sheil, Mary Cecelia; Cherryvale.
Shoots, Edith Maurine; Pittsburg.
Sighel, Tracy Josephine; Pittsburg.
Simmons, Jewell Mildred; *Iantha, Mo.*
Simpson, Gail B.; Pittsburg.
Smith, Cecile Loretta; Pittsburg.
Smith, Hattie L.; Kirkwood.
Smith, Roy Loren; Elsmore.
Spriggs, Mabelle Alice; Pittsburg.
Staton, Orlie Lee; Altoona.
Steffens, Albert William; Pittsburg.
Stephan, Anna; Walnut.
Sutterby, John Albert; Mapleton.
Talhelm, Arnold Iriving; Altamont.
Tate, Fay Irena; Pittsburg.
Taylor, Amy Pearle; *Nashville, Mo.*
Taylor, Dema; Scammon.
Taylor, Mary Elizabeth; Pittsburg.
Telfer, Wilma Gertrude; Pittsburg.
Theising, Alice; Pittsburg.
Theising, Theodore LaVern; McCune.
Travis, John E.; *Liberal, Mo.*
Trout, Ralph Haddon; Pittsburg.
Vanzant, Theodore Burton; Parsons.
Vorhies, Theodore Melvin; Pittsburg.
Walters, Clarence Merion; Pittsburg.
Ward, Arthur Edwin; Scammon.
Warden, Willis Waite; Independence.
Ware, Wesley Miles; Pittsburg.
Watson, Nora; Pittsburg.
Weiss, Carlton Fred; Baxter.
Weiss, Roy Ed.; Baxter.
Wells, Minnie Ellen; Cedarvale.
White, Mildred Irene; Weir.
Wilbert, Floriene Margaret; Pittsburg.
Williams, Iman James; Pittsburg.
Wilson, LaVon Lee; Pittsburg.
Wilson, William Otterbein; Pittsburg.
Wylie, Wilber Judson; Oswego.
Yellen, Rudy P.; *Henryetta, Okla.*
Young, Mary Margaret; Pittsburg.

HIGH SCHOOL SPECIALS.

Bennett, Mrs. Ernest; Pittsburg.
Bogle, Olive; Pittsburg.
Critton, Mrs. Nellie; McCune.
Didier, John; Frontenac.
Dunham, Flora A.; Paola.
Evans, Ralph Stephen; Pittsburg.
Ingram, Edna Myrtle; Arcadia.
Jones, Lloyd; Pittsburg.
LaVelle, Rose Maria; Moline.
More, Mrs. Nannie; Pittsburg.
Noel, Amma D.; *Purcell, Mo.*
Rugel, Frank; Pittsburg.
Tanner, Walter Edward; Pittsburg.
Weddle, Mrs. Laura E.; Garland.
Williams, Bertha M.; Pittsburg.

TRAINING SCHOOL.

Acton, Paul; Pittsburg
Allen, George; Pittsburg.
Allieth, Henry; Pittsbnrg.
Baine, George; Pittsburg.
Baker, Emerie; Pittsburg.
Barani, Lorene; Pittsburg.
Barani, Rollie; Pittsburg.
Barbine, Fred; Pittsburg.
Baxter, Georgette; Pittsburg.
Bean, George; Pittsburg.
Bean, Mary E.; Pittsburg.
Beasley, David; Pittsburg.
Beasley, Elizabeth; Pittsburg.
Beasley, Warren; Pittsburg.
Bedenne, Ann; Pittsburg.
Bennett, Clelia; Pittsburg.
Benton, Bernice; Pittsburg.
Benton, Clarence; Pittsburg.
Benton, Roberta; Pittsburg.
Benton, Thomas; Pittsburg.
Berry, Pauline; Pittsburg.
Biddle, Elizabeth; Pittsburg.
Biddle, Martha; Pittsburg.
Biddle, Roger; Pittsburg.
Billington, Nadine; Pittsburg.
Bitner, Arthur; Pittsburg.
Bitner, Louise; Pittsburg.
Bitner, Robert; Pittsburg.
Blackett, John; Pittsburg.
Borgone, Rosa; Pittsburg.
Brandenburg, Helen; Pittsburg.
Brandenburg, William; Pittsburg.
Branham, Blair; Pittsburg.
Branham, Sarah; Pittsburg.
Briggs, Glenn; Pittsburg.
Briggs, Lucille; Pittsburg.
Briles, Virginia; Pittsburg.
Broadhurst, Arthur; Pittsburg.
Broadhurst, Charlie; Pittsburg.
Broadhurst, Irene; Pittsburg.
Brown, Helen; Pittsburg.
Brinn, Mary Adell; Pittsburg.
Bureau, Eloise; Pittsburg.
Burns, Miles; Pittsburg.
Bussey, James; Pittsburg.
Caffey, Elizabeth; Pittsburg.
Callery, Annabel; Pittsburg.
Cappers, Faye Birdie; Pittsburg.
Carlton, Dorothy; Pittsburg.
Carlton, Harold Edward; Pittsburg.
Carlton, Robert; Pittsburg.
Carlyon, Le Moine; Pittsburg.
Chambles, Marion; Pittsburg.
Chambles, Roy; Pittsburg.
Cheyne, Edith; Pittsburg.
Church, Grace; Pittsburg.
Collie, Martin; Pittsburg.
Colton, Gwendolyn; Pittsburg.
Cook, Lathiel; Pittsburg.
Cooper, Evelyn; Pittsburg.
Cooper, Shirley; Pittsburg.
Covell, Vern; Pittsburg.
Creeley, Margaret; Pittsburg.
Davies, Jane; Pittsburg.
Davis, Frank; Pittsburg.
Dellenger, Alice; Pittsburg.
Dellenger, Mary Catherin; Pittsburg.
Dellenger, Ralph; Pittsburg.
Denney, Opal; Pittsburg.
Deruy, Norvelle; Pittsburg.
De Vaney, Opal; Pittsburg.
Dickey, Helen; Pittsburg.
Dickey, Maurine; Pittsburg.
Dix, Cibyl; Pittsburg.
Draper, George; Pittsburg.
Dunwell, Davette; Pittsburg.

TRAINING SCHOOL—CONTINUED.

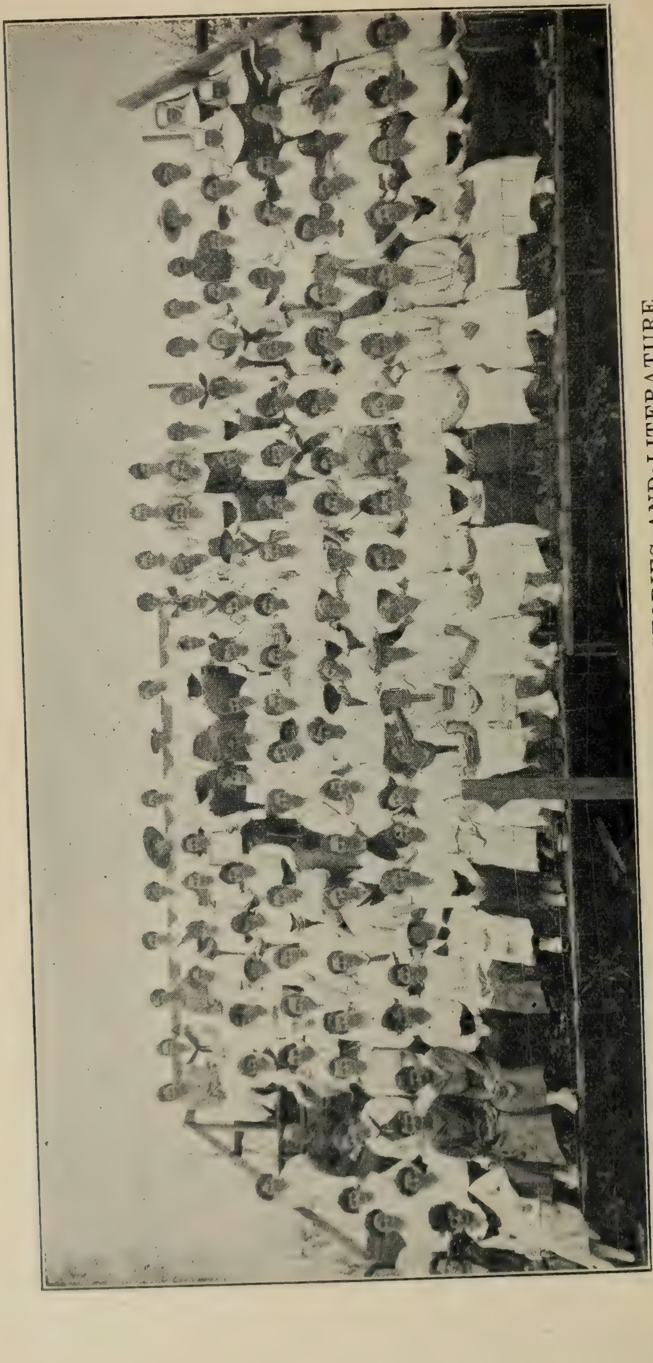
Dunwell, Gertrude; Pittsburg.
Fleming, Maxine; Pittsburg.
Flitter, George E.; Pittsburg.
Fortino, Frank; Pittsburg.
Fowler, Hugh; Pittsburg.
Fowler, John; Pittsburg.
Geiselman, Francis; Pittsburg.
Givens, William; Pittsburg.
Graham, Cora Belle; Pittsburg.
Gregory, Wayland; Pittsburg.
Grother, Adeline; Pittsburg.
Hall, Thomas; Pittsburg.
Hayden, Besse M.; Pittsburg.
Hobson, David; Pittsburg.
Hobson, Marcet; Pittsburg.
Hobson, Ruth; Pittsburg.
Hobson, Welma; Pittsburg.
Hooper, Shirley; Pittsburg.
Hooper, Homer; Pittsburg.
Hostutler, Hoyt; Pittsburg.
Jackson, Merle; Pittsburg.
Jackson, Alda Mae; Pittsburg.
Jenkins, Cecil; Pittsburg.
Jenkins, George; Pittsburg.
Jenkins, Lewis; Pittsburg.
Jenney, Raymond; Pittsburg.
Jessup, Marion; Pittsburg.
Jessup, Martin; Pittsburg.
Johnson, Irene; Pittsburg.
Johnson, Gean; Pittsburg.
Johnson, Olive; Pittsburg.
Jones, Blanche; Pittsburg.
Jones, Paul; Pittsburg.
Jones, Pauline; Pittsburg.
Jones, Ruth; Pittsburg.
Jones, Thelma; Pittsburg.
Jones, Raymond; Pittsburg.
Jordan, Charles; Pittsburg.
Keck, Marie; Pittsburg.
Kussel, Stephen; Pittsburg.
Lough, Delma; Pittsburg.
Lough, Imogene; Pittsburg.
Lough, Velma; Pittsburg.
Luccock, Velma; Pittsburg.
Luccock, Arline; Pittsburg.
McCoray, Albert; Pittsburg.
McDonald, Robert; Pittsburg.
McNally, Mary; Pittsburg.
Maneaschalke, Willie; Pittsburg.
Mangrum, Margaret; Pittsburg.
Mangrum, Mills; Pittsburg.
Manning, Helen C.; Pittsburg.
Mardell, Carder; Pittsburg.
Mardell, Wines; Pittsburg.
Markle, Fergus; Pittsburg.
Markle, Loyd; Pittsburg.
Marsh, Patty; Pittsburg.
Marsh, Richard; Pittsburg.
Mead, Inez Sue; Pittsburg.
Mead, Lorine; Pittsburg.
Mendenhall, Ethelwyn; Pittsburg.
Mendenhall, Paul; Pittsburg.
Miklnac, Annie; Pittsburg.
Millard, Raymond; Pittsburg.
Millard, Roland; Pittsburg.
Miller, Albertice; Pittsburg.
Mitchell, Harry; Pittsburg.
Moburg. Jack; Pittsburg.
Moore, Nadine; Pittsburg.
Moore, Maurine; Pittsburg.
More. Emma; Pittsburg.
Moriconi, Duvico; Frontenac.
Mornigan, Murrel; Pittsburg.
Mostetler, Hal; Pittsburg.
Nichols, Christine; Pittsburg.
Nichols, Dorothy; Pittsburg.
Nightengale, Charles; Pittsburg.
Ortaldo, Annie; Pittsburg.
Owen. Billy; Pittsburg.
Otis, Margaret; Pittsburg.
Pacone, Uga; Pittsburg.
Pallie, Barney; Pittsburg.
Pease, Daniel; Pittsburg.
Pellegrino, George; Pittsburg.
Pellegrino, Harold; Pittsburg.
Pellegrino, Josephine; Pittsburg.
Pentico, Archie; Pittsburg.
Perkins, Martin; Pittsburg.
Porter, Harrol; Pittsburg.
Price, Ruth Catherine; Pittsburg.
Pritchett, Robert; Pittsburg.
Rearnes, Joe; Pittsburg.
Reeve, Glenna; Pittsburg.
Richard, Merle; Pittsburg.
Richards, Nina; Pittsburg.
Robins, Merle; Pittsburg.
Roby, Darlene; Pittsburg.
Rogers, Doris; Pittsburg.
Rogers, Fred; Pittsburg.
Rogers. Martha; Pittsburg.
Roland, Millard; Pittsburg.
Rose, Lester; Pittsburg.
Santinii, Aldo; Pittsburg.
Sargeant, Thomas; Pittsburg.
Scott, Arthur; Pittsburg.
Scott, Bob; Pittsburg.
Scott, Eloise; Pittsburg.
Scranton, Hazel; Pittsburg.
Scranton, William; Pittsburg.
Scranton, Helen; Pittsburg.
Seeley, James; Pittsburg.
Seeley, Warren; Pittsburg.
Seglie, John; Pittsburg.
Seglie, Mary Marie; Pittsburg.
Sells, Paul Howard; Pittsburg.
Shafer, Dorothy; Pittsburg.
Shafer, Robert; Pittsburg.
Shannon, Irl; Pittsburg.
Shirk, Alice Gevene; Pittsburg.
Simpson, Arthur; Pittsburg.
Smith, Aaron; Pittsburg.
Smith, Charles; Pittsburg.
Smith, Roger; Pittsburg.
Sparks, Jack; Pittsburg.
Sparks, Edna; Pittsburg.
Sparks, Hazel; Pittsburg.
Spencer, Galen; Pittsburg.
Steffens, Charles; Pittsburg.
Sullivan, Dorothy; Pittsburg.
Tanner, Lorene; Pittsburg.
Taylor, Katherine; Pittsburg.
Theising, James; Pittsburg.
Theising, John; Pittsburg.
Thomas, Ellis Paul; Pittsburg.
Trout, Harold; Pittsburg.
Trout, Mary; Pittsburg.
Uptegrove, James Jewell; Pittsburg.
Vilmer, Nora; Pittsburg.
Walker, Merle; Pittsburg.
Walters, Clarence; Pittsburg.
Walters, Elsie; Pittsburg.
Ware, Letha Mae; Pittsburg.
Waskey, Deane; Pittsburg.
Watson, Audria; Pittsburg.
Watson, Fay; Pittsburg.
Watson, Guy; Pittsburg.
Weare, Harold; Pittsburg.
Webb, Edwin; Pittsburg.
Webb, Philip; Pittsburg.
Whitesitt, Ermal; Pittsburg.
Whitesitt, Robert; Pittsburg.
Wiles, Wilma; Pittsburg.
Williams, Carter; Pittsburg.
Wiliams, Helen; Pittsburg.
Williams. Wendell; Pittsburg.
Wolf, Olga; Pittsburg.
Wood, Dorothy; Pittsburg.
Wood, James; Pittsburg.
Wood, Virginia; Pittsburg.
Zamber, Bennie A.; Pittsburg.
Zickgraf, Louis; Pittsburg.
Ziehlke, Birdie; Pittsburg.

SUMMARY OF ATTENDANCE.

Kansas	2,750	Missouri	242
Arkansas	19	Minnesota	1
California	1	Nebraska	3
Colorado	3	North Carolina	1
Idaho	1	Ohio	1
Illinois	4	Oklahoma	45
Iowa	3	Texas	11
Indiana	1	Washington	1
Kentucky	1		
		Total	3,088

SUMMARY BY CLASSES AND DEPARTMENTS.

Graduates	24
COLLEGE DEPARTMENT.	
College Seniors	116
College Juniors	147
College Sophomores	334
College Freshmen	971
College Specials	107
DEPARTMENT OF MUSIC.	
Music students	186
NORMAL HIGH SCHOOL DEPARTMENT.	
Seniors	78
Juniors	107
Sophomores	132
Freshmen	250
Specials	15
EXTENSION DEPARTMENT.	
Correspondence-Extension	609
Trade and Industrial Extension	122
TRAINING SCHOOL.	
Eight Grades and Kindergarten	239
S. A. T. C.	
Sergeants	10
Inducted men	236
Total enrollments	3,683
Duplications	595
Different enrollments	3,088



SUMMER SCHOOL CLASS, STORIES AND LITERATURE.

SUMMARY OF ENROLLMENT, CERTIFICATES AND DEGREES, BY YEARS.

YEAR.	One-year certificates.	Three-year certificates.	Life certificates.	Degrees.	Enroll-ment.	Total teachers' certificates.
1904	14	....	....	....	143	14
1905	40	....	....	....	184	40
1906	23	9	....	....	276	32
1907	31	14	....	....	351	45
1908	21	11	....	....	325	32
1909	16	44	....	....	467	60
1910	26	38	12	....	723	76
1911	20	18	80	....	1,066	118
1912	41	74	96	....	1,183	211
1913	49	80	115	13	1,416	255
1914	88	138	152	22	1,650	400
1915	83	123	208	51	2,159	445
1916	75	127	240	52	2,514	494
1917	156	149	224	73	2,745	602
1918	302	148	207	49	3,433	706

MACHINE SHOP.

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ERRATA.—Through an error the names of H. J. PENNEY, *member Board of Administration*, and JAMES A. KIMBALL, *business manager*, were omitted from the personnel of the State Board of Administration appearing on page 3 of this catalog.

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1919/20

FEB 2 1921

Vol. XVI MARCH 15, 1920 No. 1

KANSAS
STATE MANUAL TRAINING
NORMAL SCHOOL

ANNUAL CATALOGUE

1919 - 1920

Issued Quarterly by the
State Manual Training Normal School
Pittsburg, Kansas

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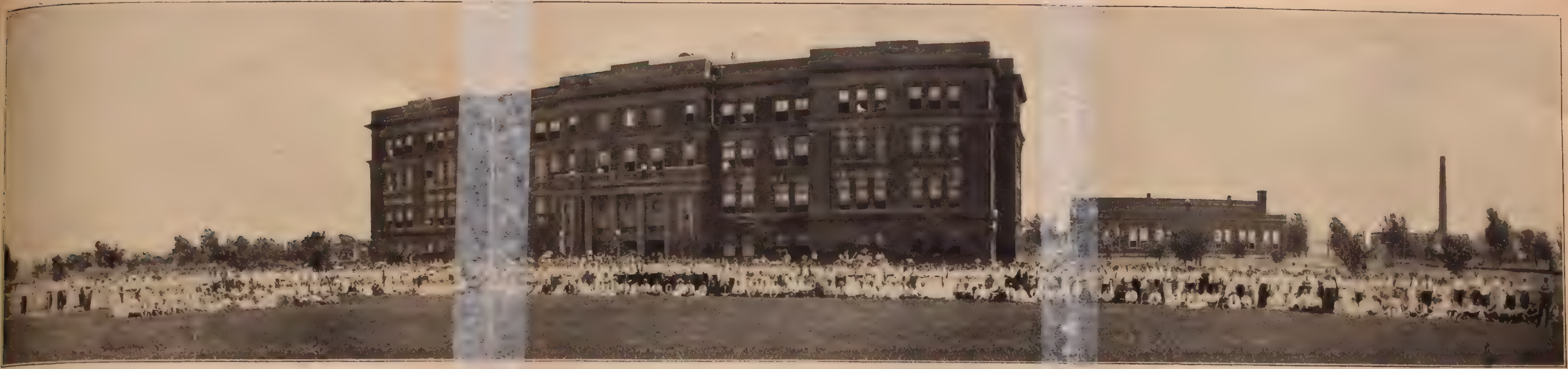
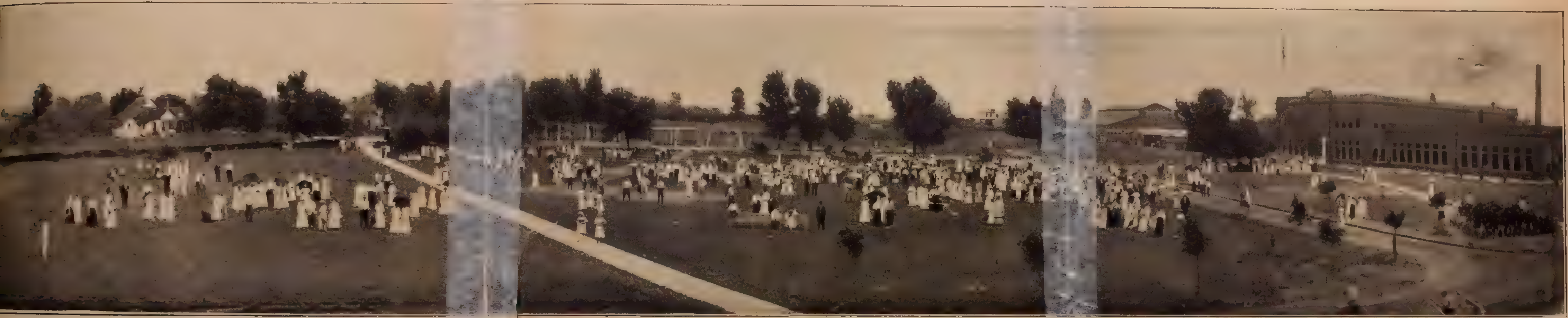


SUMMER SCHOOL GROUP AT STATE MANUAL TRAINING NORMAL SCHOOL.



GROUP IN PLAYGROUND ACTIVITY, STATE MANUAL TRAINING NORMAL SCHOOL.

Vol. XVI No. 1

KANSAS
STATE MANUAL TRAINING
NORMAL SCHOOL

A COLLEGE FOR TEACHERS, INCLUDING ALL THE
GENERAL AND INDUSTRIAL ARTS AND
VOCATIONAL SUBJECTS

ANNUAL CATALOGUE

1919 - 1920

PITTSBURG, KANSAS
MARCH 15, 1920

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Gov. Henry J. Allen, *Chairman.*
Dr. Wilbur N. Mason. Hon. H. J. Penney.
Hon. E. L. Barrier.
Hon. James A. Kimball, *Business Manager.*
C. W. Myers, *Assistant Business Manager.*
E. B. Cronemeyer, *Assistant Business Manager.*
Malcolm M. Gray, *Secretary.*

SECTION I.

General Information.

Calendar, 1920-1921.

September 13, Monday	Entrance examinations.
September 14, Tuesday	Enrollment.
September 15, Wednesday	Beginning of class work.
November 15, Monday	Midsemester term opens.
November 24-29	Thanksgiving vacation.
December 20, Monday	First semester musical recital.
December 21, Tuesday	Contest in oration and debate.
December 22, Wednesday	Work closes for 1920 at 4:10 p. m.
January 4, 1921, Tuesday	Resumption of first semester's work.
January 21, Friday	First semester's work closes.
January 24, Monday	Second semester opens with enrollment.
January 25, Tuesday	Beginning class work.
March 25, Friday	Commemoration Day.
March 28, Monday	Midsemester term opens.
April 26 to 29	Annual musical festival.
May 22, Sunday	Baccalaureate sermon.
May 23, Monday	Annual recital by music department.
May 24, Tuesday	Contest in dramatic art and declamation.
May 25, Wednesday	Commencement.
May 31, Tuesday	First term summer session opens.
July 29, Friday	First term summer session closes.
August 1, Monday	Second term summer session opens.
August 26, Friday	Second term summer session closes.

Social Calendar.

September 24, Friday, faculty reception.

September 28, Thursday, Y. M. and Y. W. general reception to student body.

October 13, Wednesday, annual picnic at Lincoln Park.

January 28, 1921, Friday, Kansas Day pageant.

February 17, Thursday, girls' friendship dinner (Y. W.'s in charge).

February 22, Tuesday, College reception.

May 14, Saturday, senior girls' breakfast.

Calendar for 1920.

JANUARY.

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Calendar for 1921.

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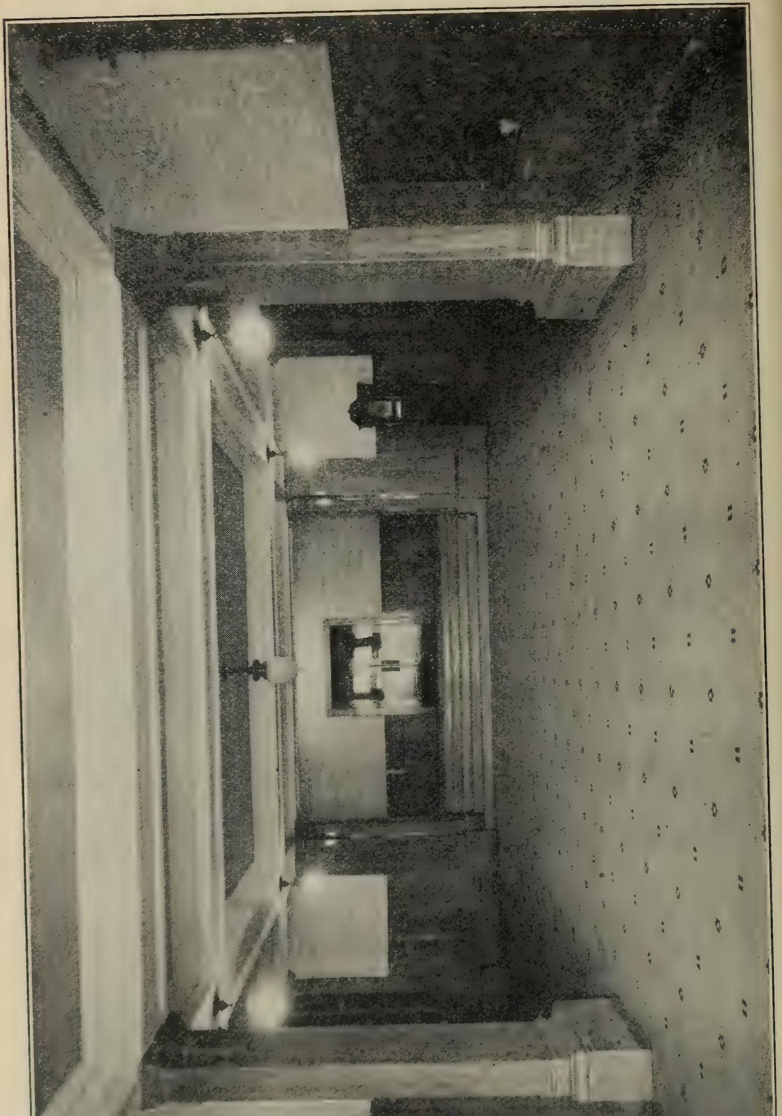

ROTUNDA, CARNEY HALL.

FOREWORD.

In presenting to the public the catalogue of the State Manual Training Normal College for the year 1920-'21, we do so with the feeling that some changes at least have been made which will prove of decided advantage.

This institution is primarily a teachers' college, seeking to equip in a most efficient manner those who wish to become teachers.

The reader of this catalogue will observe that while courses are set forth for the preparation of teachers for rural, elementary grade, and high school, there are also many opportunities in courses offered for preparation in special fields of teaching, such as Drawing, Music, Commerce, Agriculture, Industrial Arts, Home Economics and Physical Education.

Another feature of this catalogue is the opportunity offered for those who desire preparation for purely vocational, industrial and technical fields of activity.

To serve this increasing demand, and especially as it has become so apparent and urgent in this particular part of our state, two-year courses of the most practical nature and content are now being offered in the following: Industrial, Electrical Engineering, Mining Engineering, Mechanical Engineering, Civil Engineering, Machine Shop, Drafting and Design, Pattern Making, Automobile, Cafeteria Management, Home Makers, Sheet Metal, Commercial. Full two-year credit is given for the above courses by engineering colleges when the work has been completed by those who are graduates of an accredited four-year high school. For those who have not had the advantage of such a high-school preparation, two-year vocational courses along the line of Mining, Steam and Stationary Engineering, Electrical Trades, and Telegraphy and Radio work are offered.

No apology is made for this seeming innovation in the curricula of a teachers' college. Far too long have the public schools of our country failed to make any affective and practical application or any vital functioning of the subjects taught. School life has been distinctively one thing; the social life of our people another; and so thoroughly have the two been kept apart that, like the Jews and Samaritans of old, they have had, for the most part at least, "no dealing with each other."

This undesirable and unprofitable condition has not been the fault of the public school teacher nearly so much as the fault of our higher institutions of learning. Many teachers in our public schools have not had special preparation for the work which they are doing, others who have had preparation have received it in higher institutions of learning where little or no effort has been made toward a practical application of the subjects taught; but a changed notion as to the whole function of education is apparent. A notion that the value of the practical, that education which the great masses of mankind have long felt the need of for increased efficiency of the common activities of daily life, has had too little value placed upon it; and this changed notion has taken place without the least discredit to the beautiful, the inspiring and the so-called cultural and refining elements and factors in education.

The teachers' college which does not possess within its faculty, its equipment and its facilities, the ability to carry out courses for the preparation of individuals for the most effective and practical citizenship in other fields of activity; or the teachers' college which places so little value upon this particular phase of education as a legitimate part of our educational responsibility, cannot perform its greatest service to the public.

The same educational preparation that prepares an individual to be a real efficient teacher is the same sort of education that prepares him to be an efficient and good citizen, so far as the courses taken are concerned. There is no one kind of knowledge in science for the teacher and another kind for the man who does not expect to teach; there may be a difference in quantity, not in quality.

So look this catalogue through if you contemplate the attractive profession of teaching. We feel sure you cannot fail to be interested. If, on the other hand, you desire a preparation for some other field of activity, the possibility is you will find the opportunity for such preparation set forth in this catalogue. For further information or particulars write,

W. A. Brandenburg, *President.*

Kansas State Manual Training Normal.

The Faculty.

The names of the members of the faculty are arranged in order of their tenure, except President and Dean of College.

WILLIAM A. BRANDENBURG, PH. B.,

President.

Drake University, Ph. B., 1895-1900, Graduate of College of Liberal Arts; Superintendent Park Avenue Schools, Des Moines, Iowa, 1900-1903; Superintendent Capital Park Schools, Des Moines, Iowa, 1903-1905; Superintendent of Schools, Mason City, Iowa, 1905-1910; Superintendent of Schools, Oklahoma City, 1910 to August, 1913. Assistant Professor in Department of Education, Drake University, Summer Session, 1903, 1904, 1905; Member National Education Council; Author of "Outline Studies in U. S. History and Civics"; President State Manual Training Normal College, August, 1913—.

G. W. TROUT, A. B., A. M.,

Dean of College; Professor of History and Social Sciences.

A. B., Ottawa University, 1899; Student of Theology and Sociology, Rochester Seminary; 1899-1902; M. A., Ottawa University, 1902; Professor of History and Social Sciences, Kansas State Manual Training Normal, 1907—.

ODELLA NATION, B. S.,

Librarian.

Special work in Library Methods, Kansas State Normal, 1903; B. S., State Manual Training Normal, 1918. State Manual Training Normal, 1903—.

LYLE BROWER, B. S.,

Professor of Drawing and Design.

B. S., University of Illinois, 1898; Graduate Student in Education and Drawing, University of Illinois, Summer Terms, 1902-1904; Director of Manual Training and Drawing, Public Schools, Rockford, Ill., 1898-1903; Mechanical Drawing Instruction in Y. M. C. A. Evening School, Rockford, Ill., 1899, 1900, 1901; Director of Vacation School, Rockford, Ill., 1899, 1900; Director Manual Training, Elgin, Ill., 1903-1904; Director Manual Training and Instructor in Free-hand Drawing, High School, Springfield, Ill., 1904-1905; Member National Society for the Promotion of Industrial Education, 1914; Trustee of the Kansas Federation of Art, 1916-1918; Professor of Drawing and Design, Kansas State Manual Training Normal, 1905—.

ELSA SCHOSHUSEN, A. B.,

Kindergarten Critic Teacher in the Training School.

Kindergarten and Primary Diploma, Kansas State Normal, 1901; Life State Certificate, Kansas State Manual Training Normal, 1910; Teacher, Pittsburg City Schools, 1905-1906; Kindergarten Critic Teacher, Kansas Manual Training Normal, 1906—; A. B., State Manual Training Normal, 1913.

EULALIA E. ROSEBERRY, B. S.,

Professor of Geography.

Diploma, Kansas State Manual Training Normal, 1906; Diploma and Life State Certificate, Kansas State Normal, 1907; Professor of Geography, Kansas State Manual Training Normal, 1907—; Special Work, Chicago University. B. S., State Manual Training Normal, 1916.

JAMES ANDERSON YATES, B. S., M. S.,

Professor of Chemical and Physical Sciences, Director Electrical and Mining Engineering.

B. S., University of Kentucky, 1890; M. S., University of Kentucky, 1899; Graduate Student, University of Chicago, Summer Terms, 1895, 1896, 1898, 1900, 1901, 1902; Fellow, American Association Advancement of Science; Principal Laurel Seminary, London, Kentucky, 1890-1892; Professor Natural Sciences, Williamsburg Institute, 1892-1897; Professor of Natural Sciences, Ottawa University, 1897-1907; Union Pacific Fossil Field Expedition, Summer, 1899; Assistant Geologist, Kansas State Geological Survey, Summers. 1903, 1904, 1905, 1906; Professor Physical Sciences, Kansas State Manual Training Normal, 1907—.

ERMINE OWEN, M. A.,

Professor of English.

M. A., McGee College (now Missouri Valley College), 1879; Summer Student in Hammil School of Expression, 1886 and 1887; Chicago Conservatory of Expression, 1888; Fritz Krummel Turnverein, New York, 1902; Chicago Normal School, 1903; Head of Department of History and Civics, State Normal School, Kirksville, Mo., 1883-1899; Professor of Oratory and Physical Culture and Assistant in English, State Normal School, 1899-1904; Professor of English, State Manual Training Normal, 1907—.

D. M. BOWEN, B. A.,

Principal of Training School.

Diploma, Central Normal College, Danville, Ind., 1885; B. A., Kansas Normal College; Chicago, Summer, 1914; Life Diploma, Kansas Board of Education, 1905; Teacher, Fort Scott, 1889; Special Work, Indiana University, Summer, 1892; Special Work, University Rural and Village Schools, 1885-1888; Ward Principal, 1889-1892; Principal High School, Fort Scott, 1892-1895; Superintendent City Schools, Fort Scott, 1895-1909; Principal of Training School, Kansas State Manual Training Normal, 1909-1913; Secretary, State Board of Education Administration, 1913-1915; Principal of Training School, Kansas State Manual Training Normal, 1915, 1916.

ORIS P. DELLINGER, A. B., PH. D.,

Professor of Biology.

Diploma, Indiana State Normal, 1900; A. B., Indiana State University, 1904; Fellow in Biology, Clark University, 1904-1907; Ph. D., Clark University, 1907; Fellow, American Association Advancement of Science; Instructor in Biology, Indiana State Normal, 1901-1903; Instructor in Botany and Nature Study, Indiana University, Summer Terms, 1902-1908; Assistant in Biology, Clark College, 1904-1907; Instructor in Biology, Clark College, 1907-1908; Professor of Biology, Winona College, 1908-1909; Professor of Biology, Kansas State Manual Training Normal, 1909—.

LILLIAN I. McLEAN, B. S.,*

Primary Critic Teacher in Training School.

Primary Teacher, Fort Scott, 1903-1909; Primary Teacher, Kansas City, Mo., 1909; Primary Critic Teacher, Kansas State Manual Training Normal, 1911—.

J. A. G. SHIRK, A. M., M. S.,

Professor of Mathematics and Applied Mechanics, Director Civil and Mechanical Engineering.

A. B., McPherson College, 1901; A. M., McPherson College; M. S., University of Kansas, 1905; Sigma Xi, University of Kansas, Iota Chapter, 1905; Graduate Student, University of Kansas, Summer Session, 1909, 1911; Graduate Student, University of Chicago, Summer Quarters, 1906 and 1910; Professor of Mathematics and Physical Sciences, McPherson College, 1901-1904; Fellow in Mathematics, University of Kansas, 1904-1905; Assistant Instructor in Mathematics, University of Kansas, 1905-1906; Professor of Physics and Engineering, Ottawa University, 1906-1912; Assistant Professor of Physical Sciences, Kansas State Manual Training Normal, 1912-1914; Professor of Mathematics, 1914; Professor of Mathematics and Applied Mechanics.

A. H. WHITESITT, B. S.,

Professor of Industrial and Applied Arts.

Vincennes University, 1897; Diploma, Indiana State Normal, 1908; Bradley Polytechnic Institute and The Stout Institute, Summers, 1908-1912; Director of Manual Training, City Schools, East Chicago. 1908-1911; Instructor in Emmerich Manual Training High School, Indianapolis, 1911-1913; Director of Woodworking Department, Kansas State Manual Training Normal, 1913-1917; Director of Industrial and Applied Arts, 1918—.

ADELA ZOE WOLCOTT, PH. B., A. M.,

Professor of Home Economics and Joint Director.

Diploma, American School of Home Economics, 1907; A. D. E., Lewis Institute, 1908; Ph. B., University of Chicago, 1909; Student, Graduate School of Home Economics, Summer, 1912; Head of Department of Home Economics, Colorado Woman's College, Denver, Colo., 1909-1913; A. M., Teachers' College, Columbia University, 1918; Professor of Home Economics, State Manual Training Normal School, 1913—.

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* Away on leave of absence.

MARGARET COVENTRY, A. B.,

Assistant Professor Physical Sciences.

Grade Teacher, Fort Scott, 1906-1910; Life State Certificate, Kansas State Manual Training Normal, 1912; Student Assistant in Chemistry, Kansas State Manual Training Normal, 1911-1913; A. B., Kansas State Manual Training Normal, 1913; Assistant in Chemistry, Kansas State Manual Training Normal, 1913—.

BELLE PROVORSE,

Secretary to the President.

Graduate of Montgomery County High School, Independence, Kan., 1909; National Business College, Independence, Kan., 1910; Teacher's Certificate, Gregg School, Chicago, 1911; Life Certificate, State Manual Training Normal, 1918; Principal, Shorthand Department, Coffeyville Business College, Coffeyville, Kan., 1911-1912; Shorthand Instructor, Farmers' Business College, Fort Worth, Tex., 1912-1913; Shorthand Instructor, State Manual Training Normal School, 1913; Stenographer, State Manual Training Normal School, 1914; Secretary to the President, State Manual Training Normal School, 1917—.

WILLIAM EDGAR RINGLE, A. B.,

Associate Professor of Biology.

A. B., Kansas State University, 1898; author of "Student's Botany," a spring flora of Kansas; From June, 1918, to July, 1919, Area Educational Superintendent with A. E. F. in France; State Manual Training Normal, 1913—.

F. H. DICKINSON,

Assistant Professor of Industrial Arts.

Served apprenticeship in Santa Fe Shops, Topeka; Twelve years' consecutive service with Santa Fe Railway Company; Two years in service of the Smith Automobile Company, Topeka, Kan.; Two years with the Chalmers Machine Co., Milwaukee, Wis.; Technical Training in The Stout Institute and Kansas State Manual Training Normal; Four years Director of Manual Training in High School, Coffeyville, Kan.; Instructor in Pattern Making and Foundry, State Manual Training Normal, 1914—.

HATTIE MORRE MITCHELL, A. M.,

Professor of Methodology, and Dean for Women.

Ph. B., Drake University, 1906; Pe. B., Drake University, 1898; A. M., Drake University, 1907; Student, University of Chicago, 1909; Teacher of Mathematics in High School, Mason City, Iowa, 1888-1890; Principal of Schools, Floyd, Iowa, 1893-1895; Preceptress in Nora Springs Seminary, 1895-1897; Supervisor, Training School for Primary Teachers, Drake University, 1897-1902; Dean of Women, Drake University, 1902; Instructor in Mathematics, Drake University, 1902-1909; Assistant Professor of Mathematics, Drake University, 1909-1910; Professor of Methodology, Drake University, 1910-1914; Professor of Methodology, Kansas State Manual Training Normal, 1914—.

E. F. SHOLTZ, B. S.,

Director of Department of Commerce.

State Manual Training Normal; K. N. C.; Clinton Academy; Cooper College; Graduate Gregg School, Chicago, and P. B. C., Pittsburg; Principal, Ward Schools; Head of Department, Pittsburg Business College; Head of Commercial Department, Pittsburg High School, Pittsburg, Kan.; Kansas State Manual Training Normal, 1914—.

J. G. WILKINS,

Assistant Professor in Free-hand Drawing and Wood Finishing.

Two Summers' Work in the Fine Arts Institute, Kansas City, Mo.; One Year's Credit in the Academy of Fine Arts, Chicago, Ill.; Assistant in the Life Class in the Academy of Fine Arts; One and One-half Years' Work in the Kansas State Manual Training Normal; Instructor in Kansas State Manual Training Normal, 1914—.

ANNIE MARRIOTT, B. S.,

Assistant Professor of Home Economics.

Life certificate, Kansas State Manual Training Normal, 1912; B. S., State Manual Training Normal, 1914; Chicago University, Summer, 1914; Student Assistant in Domestic Science, Kansas State Manual Training Normal, 1913-1914; Assistant Instructor in State Manual Training Normal, 1914-1918; Assistant Professor, 1918—.

WALTER McCRAY,

Director of Music.

Student, Herman Bellstedt, World's Greatest Cornet Soloist and Band Master; Student, Harbard Brase, of the Conservatory, Stockholm, in Harmony and Counterpoint;

Director of Music, Nickerson Normal and High School, 1899-1900; Head of Band Department, Teacher of Harmony, Musical History, Supervisor of Model School Music, Bethany College, Lindsborg, Kan., 1901-1903; Received First Prize at the State Musical Jubilee at Hutchinson, Kan., in Cornet Soloist Contest, 1899; Conductor's of McCray's Band, which is one of the leading organizations of the Middle West; Wide experience as Conductor of Choral Societies; Supervisor of School Music.

O. F. GRUBBS, A. B., B. S.,

Associate Professor of History.

Diploma, State Normal School, 1912; Life Certificate, 1905; A. B., B. S., Kansas University, 1914; Teacher and Ward Principal in City Schools, Kansas, 1902-1906; Principal, Thayer, Kan., 1906-1909; Superintendent, Colony, Kan., 1909-1910; Superintendent, Neodesha, Kan., 1910-1912; Assistant in History, Kansas State Manual Training Normal, 1914—.

R. HESSELBERG,

Professor of Violin.

Student of W. Besekirski, Imperial Court Violinist in Moscow, Russia; Graduate Royal Academy of Music in Berlin, Main Subject, Violin, under Prof. Dr. Joseph Joachim, 1894-1899; Private Assistant to Doctor Joachim, in Berlin, 1900-1905; Concertized in Europe, 1905-1907; Teacher of the Calhoun School of Music, Joplin, Mo., 1907-1914; Soloist with the Minneapolis Symphony Orchestra, 1912; Chicago Symphony Orchestra, 1908; St. Louis Symphony Orchestra, 1913; Soloist of the American Guild of Violinists, in Chicago, 1912; President F. Kneisel; Member and Soloist of the Missouri Music Teachers' Association, 1913.

CHARLES R. WASSER, JR.,

Assistant Professor of Industrial Arts.

Graduate, Williamson Industrial School, Pennsylvania, 1908; Three Years' Practical Shop Experience with Bethlehem Steel Company, Bethlehem, Pa., and Ingersoll, Rand & Co., Easton, Pa.; Superintendent of Shop Work, Ursinus College, Collegeville, Pa., 1910-1912; Student, Teachers' College, Columbia University, Summers, 1908-1912; Resident Student, 1912-1913; Instructor in Furniture Design and Cabinetmaking, Kansas State Manual Training Normal School, 1915—.

SAMUEL J. PEASE, M. A.,

Professor of Languages.

A. B., Northwestern University, 1897; M. A., Northwestern University, 1898; Graduate Student at Northwestern, 1897-1899, and Summer, 1908; Colorado, 1902-1903; Chicago, 1903-1905 (Fellow in Greek), and Summers, 1900, 1903, 1906, 1914; Instructor in Greek and Modern Languages, Hamline University, 1899-1901; History and Civics, Colorado State Preparatory School (Boulder), 1902-1903; Instructor in Greek and German to Assistant Professor of German and French, University of North Dakota, 1905-1913; Latin and German, Chicago High Schools, 1913-1915; Professor of Languages, Kansas State Manual Training Normal School, 1915—.

GRETA EULALIE SMITH, B. S.,

Assistant Professor Home Economics.

Special Student, University of Minnesota; Instructor in Domestic Art, Unity Settlement House, Minneapolis, Minn., 1902-1908; Instructor of Domestic Art, Minnesota School of Agriculture, 1908-1910; Extension Work, Minnesota, Summer, 1910; Instructor in Textiles and Clothing, College of Agriculture, University of Minnesota, 1910-1914; Student, Teachers' College, Columbia University, Summer School, 1913; Student, University of Minnesota Summer School, 1914; Student, Teachers' College, Columbia University, 1914-1915; Bachelor's Degree and Bachelor's Diploma, Teachers' College, Columbia University, 1915; Head of Domestic Art Section, Kansas State Manual Training Normal School, 1915—.

VIVIAN ATWOOD,

Assistant Professor of Applied Arts.

Diploma, Applied Arts School, Chicago, Ill., 1913; Postgraduate work, 1914; University of Chicago, Summer, 1914; Supervisor of Applied Arts, Coffeyville, Kan., 1914-1916; Instructor in Applied Arts, State Manual Training Normal School, 1916—.

ERNEST BENNETT, B. S.,

Assistant Professor of French and Latin.

Student in Ottawa University, 1907-1908; B. S., Kansas State Manual Training Normal School, 1917; Principal, Sedan, Kan., High School, 1904-1907; Superintendent of Schools at Severy, Kan., 1908-1911; Superintendent of Schools at Howard, Kan., 1911-1914; Conductor and Instructor in Normal Institutes; Member Editorial Staff of

Pittsburg *Daily Headlight* two years; Instructor in Languages, State Manual Training Normal School, 1916-1918; On leave as Y. M. C. A. secretary with French troops in France, 1918-1919; Assistant Professor of French and Latin, 1919—.

J. F. MITCHELL, A. B., A. M.,

Registrar.

A. B., Ohio Northern University, Ada, Ohio; A. M., Drake University, Des Moines, Iowa; Graduate Student, University of Chicago; Superintendent of Schools, Garner, Iowa. Nora Springs, Iowa; Principal Nora Springs Seminary, Nora Springs, Iowa; Chair of History, Drake University, Des Moines, Iowa; Registrar, 1917—.

EDGAR NELSON MENDENHALL, PH. B.,

Professor of Rural Education.

Ph. B., University of Chicago, 1917; Student, Franklin College, Franklin, Ind., Spring Term, 1891; Indiana University, Summer, 1899, Spring Term, 1893, Summer, 1910; Harvard University, Summer, 1896; Teacher in Rural Schools, Johnson County, Indiana, 1890-1893; Principal Township Rural High School, 1893-1896, Decatur County, Indiana; Teacher and Principal City High School, 1896-1903, Greensburg, Ind.; County Superintendent of Schools, 1903-1911; Decatur County, Indiana; Member of Indiana State Reading Circle Board, 1906-1909; City Superintendent of Schools, 1911-1916, Goshen, Ind.

ZOA A. THRALLS, B. PED., PH. B.,

Assistant Professor of Geography.

Ped. B., Fourth District State Normal, Springfield, Mo., 1913; Ph. B., University of Chicago,.1917; Grade Teacher, Webb City, Mo., 1908-1909; Instructor in English High School, Prosperity, Mo., 1909-1911, and Alba, Mo., 1911-1912; Instructor in English High School, Mound City, Mo., 1913-1914; Seventh and Eighth Grade Critic, State Normal, Springfield, Mo., 1914-1915.

BESS M. HAYDEN,

Intermediate Critic Teacher.

Graduate, Illinois State Normal, 1908; Grade Teacher, Benton, Ill., 1909; Grade Teacher, Carbondale, Ill., 1910-1914; Student, Columbia University, Summers, 1910-1913, Critic Teacher, South Dakota State Normal, 1915; Critic Teacher, Oklahoma State Normal, 1916.

RICHARD ROBERTS SIGLER, A. M.,

Associate Professor of Biology.

A. B., Indiana State Normal; A. M., Indiana University; Assistant in Physiology, Indiana State Normal; Fellowship in Physiology, Indiana University; appointed Instructor in Physiology in Indiana University School of Medicine, 1917; Sigma Xi, Indiana University, 1917; Indiana Academy of Science.

C. O. VAN DYKE, M. A.

Associate Professor of Mathematics.

B. A., Campbell College, 1908; Surveyor, Rooks County, Kansas, 1909-1910; M. A., Kansas University, 1910; Summer Sessions, Kansas University, 1910 and 1916; Professor of Mathematics, Campbell College, 1910-1914; Professor of Mathematics, Kansas City University, 1914-1915; Department of Social Science and Instructor in Mathematics, Kansas City University, 1915 - January, 1918; Assistant Professor of Mathematics, Kansas State Manual Training Normal School, January, 1918—.

VIRGINIA FITZHUGH SHEARER, B. S.

Assistant Professor of Home Economics.

Student, Mills College, Oakland, Cal., 1908-1909; Lewiston, Idaho, State Normal, 1909-1910; Diploma, School of Household Arts, Pratt Institute, Brooklyn, 1912; Instructor, Domestic Art, University of Idaho, Moscow, Idaho, 1912-1913; Domestic Art, Lewiston, Idaho, 1913-1915; B. S. in Education and Supervisor's Diploma in Household Arts, Teachers' College, 1916; Assistant Professor Home Economics, State Manual Training Normal School, Summer, 1918—.

O. B. BADGER,

Assistant Professor of Industrial Arts.

Bradley Polytechnic Institute, Summers, 1907, 1908, 1909, and the second semester 1908; Stout Institute, Summer, 1909; University of Wisconsin, Summers, 1910-1913 and Second Semester 1912; Instructor Manual Arts, Graysville, Ind., Consolidated Schools, 1906-1907; Supervisor Manual Arts, Fargo, N. D., 1913-1917; Instructor in University of Wisconsin, Summer Terms, 1912-1913; Supervisor of Industrial Arts, Practice Teaching, Kansas State Manual Training Normal, 1918—.

EDITH E. CASSEDAY,

Assistant Professor of Home Economics.

Student, University of Minnesota, 1909-1911; Student, Teachers' College, Columbia University, Summer, 1918; Instructor in Home Economics, St. James, Minn., 1912-1913; Supervisor of Home Economics, Wabasha, Minn., 1913-1914; Supervisor of Domestic Art, Waterloo, Iowa, 1915-1918; Assistant Professor of Home Economics, State Manual Training Normal School, 1918—.

GEORGE V. EMERY, A. B.,

Associate Professor of Physical Sciences.

A. B., University of Kansas, 1913; Three Years Student of Electrical Engineering, University of Kansas; Graduate Student, Kansas University, Summer, 1914; Kansas City Western Cabinet and Fixture Company, Summer, 1908; Assistant Electrical Inspector, Colorado Fuel and Iron Company, Pueblo, Colo., Summer, 1909; Superintendent, Viola, Kan., Schools, 1913-1914; Instructor in Physics, Iowa State College, Ames, Iowa, 1914-1918; Graduate Work, Iowa State College; Kansas State Manual Training Normal School, 1918—.

CLINTON W. WRIGHT, A. B.,

Assistant Professor of Mathematics.

Life Diploma, Kansas State Normal, 1908; A. B., McPherson College, 1910; Graduate Student, University of Kansas, 1912; Graduate Student, Columbia University, Summers of 1915 and 1916; Superintendent of Clyde, Kan., 1909-1910; Head of Department of Mathematics, East High School, Waterloo, Iowa, 1912-1917; Principal of High School, Waverly, Iowa, 1917-1918; Assistant Professor of Mathematics, Kansas State Manual Training Normal School, 1918—.

ANNE CASELEY, A. B.,

Assistant Professor of History.

Diploma, Richmond Normal Training School, 1902; B. A. Degree, Earlham College, Richmond, Ind., 1911; Student, Chicago University, Summers 1905-1912-1918; Traveled in Europe Summer of 1913; Teacher of History and English in Seventh and Eighth Grades, Kendallville, Ind., 1902-1905; Teacher of History in High School, Kendallville, Ind., 1905-1909; Teacher of History in High School, Kendallville, Ind., 1911-1912; Teacher of History in Muncie Normal, Muncie, Ind., 1912-1917; Teacher of History, Kansas State Manual Training Normal School, 1918—.

WM. H. MATTHEWS,

Assistant Professor of Physical Sciences.

Student State Manual Training Normal School, 1903, 1904, 1905, 1915, 1916, 1917, 1918; Instructor Physical Sciences, 1918—.

JESSIE C. LESLIE, B. S.,

Critic Teacher Junior High School.

B. S. in Education; Seven Years' Experience in City Schools; One Year High-school Experience; State Manual Training Normal School. 1918—.

ANTHONY STANKOWITCH,

Professor of Piano.

Graduate, Royal Conservatory of Leipsic; Three Years' Post Graduate Work, Vienna; Head of Piano Department, Philadelphia Conservatory, Three Years; Instructor Piano in Northwestern University, Five Years.

ELIZABETH HALLENBECK GILBERT,

Professor of Voice.

Studied Voice under Madame Dyas-Standish, of New York City, Herman De Vries and other Teachers of Chicago, but for the Past Nine Years with Lucille Stevenson, of the Cosmopolitan School, Chicago; Piano from the age of six, with Various Teachers in Minneapolis, Chicago and New York; Taught Privately in Chicago, was Soloist at Several Churches, and Appeared in Recitals, Season 1917-1918; Teacher of Voice and Director of Girls' Glee Club at Lawrence Conservatory, Appleton, Wis.; Honorary Member of Mu Phi Epsilon, National Musical Sorority; Kansas State Manual Training Normal, 1919—.

W. R. CLEVELAND, B. S., M. S.,

Associate Professor of Physical Sciences.

Life Certificate from the State Normal at Emporia in 1904; B. S., State Manual Training Normal, 1914; M. S. in Chemistry, University of Wisconsin, 1917; Superintendent of Schools, Walnut, Kan., 1904-1912; Superintendent of Schools, Mulberry, Kan., 1912-1916; Research Assistant in the Chemistry of Forest Products, University of Wisconsin, 1916; Assistant Instructor in Chemistry, University of Wisconsin, Summer, 1917; Instructor in Chemistry, Medical Department, University of Southern California, 1917-1919; Assistant Professor of Chemistry, State Manual Training Normal, 1919—.

WALTER S. LYERLA, B. S.,

Assistant Professor in Commerce.

Kansas State Manual Training Normal, 1918; Diploma, Gem City Business College, Quincy, Ill., 1906; Student, Illinois State Normal, 1908-1909; University of St. Louis, 1909-1910; Principal in Rural and City Schools, Cherokee County, Kansas, 1911-1914; Head of Commercial Departments, Junior and Senior High Schools, Chanute, Kan., 1914-1917; Principal, Senior High School, Chanute, Kan., 1918-1919; State Manual Training Normal, 1919—.

WINONA McLATCHEY,

Instructor in Public-school Music and Harmony.

Graduate of Fine Arts Department of Washburn College at Topeka, 1914; One Semester's Work in Public School Music, Conducting Voice and Piano in Columbia University, New York, 1916; Public School Music Supervisor in Abilene, Kan., one year, 1914-1915; in Iola, Kan., two years, 1915-1917; in Pittsburg, Kan., two years, 1917-1919. State Manual Training Normal, 1919—.

PRESTON E. REED, A. B.,

Associate Professor of English.

Undergraduate Work at Albion College, Albion, Mich.; Graduate Work at University of Chicago; Three Years of Lyceum and Chautauqua Platform Work; Teaching Positions, Superior Central High School, Superior, Wis.; Assistant Dean to the Y. M. C. A. College, Central Y. M. C. A., Chicago; Head of the Department of Rhetoric in Illinois Wesleyan University, Bloomington, Ill.

L. A. GUTHRIDGE, B. S.,

Director of Extension Department.

Principal Washington School, Independence, Kan., 1899-1909; Superintendent Galena City Schools, Galena, Kan., 1909-1913; Practical Agriculture, 1913-1915; Principal McKinley School, Independence, Kan., 1915-1919; Director of Extension Department, Kansas State Manual Training Normal, 1919—.

ESTHER STEWART,

Instructor in Piano.

Graduated from Music Department of Pittsburg State Normal, 1917; Studied in New York City, 1918-1919, under Ernest Hutcheson; Taught Piano in the State Manual Training Normal, Summer Term of 1917; State Manual Training Normal, 1919—.

L. C. GUFFEY,

Instructor in Commerce.

Western Kentucky State Normal, 1906-1907; B. C. S., Bowling Green Business University, Bowling Green, Ky., 1905-1908; Principal Commercial Department, Joplin Business College, Joplin, Mo., 1909-1910-1911; Assistant to Principal and Principal, Commercial Department, Cherokee County High School, Columbus, Kan., 1911, 1912, 1913, 1914, 1915; Principal, Commercial Department, Labette County High School, Altamont, Kan., 1916-1917; Bookkeeper for Stauffer Cammack Grain Co., Columbus, Kan., 1918.

OSCAR W. ALM., M. A.

Principal of Junior Training High School.

A. B., University of Nebraska, 1917; M. A., Columbia University, 1918; Diploma, Superintendent of Schools, Teachers' College, Columbia University, 1918; Phi Beta Kappa, University of Nebraska, 1917; Instructor in Psychology, State Manual Training Normal School, Summer, 1919; Principal Junior Training High School, State Manual Training Normal School, 1919—.

BERTHA A. BENNETT, B. S.,

Director of Physical Education for Women.

Graduate Posse Normal School of Gymnastics; B. S., and Teacher's Diploma in Physical Education, Columbia University; State Manual Training Normal, 1919—.

ETHEL MAE HILL, B. S.,

Assistant Director of Physical Education for Women.

B. S., Columbia University, 1919; State Manual Training Normal, 1919.

JOHN H. BOWERS, PH. D., LL. B.,

Associate Professor of History.

A. B. and LL. B., West Virginia University; Graduate Work at Ohio Wesleyan and at Chicago University; A. M. and Ph. D., Illinois Wesleyan; City Superintendent Elizabeth, Pa., Waukon, Iowa, and Covington, Tenn.; Teacher State Normals of West Virginia, South Dakota and Wisconsin; Ten Years Dean of School of Education, Oklahoma A. and M. College; State Manual Training Normal, 1919.

FRANK DEERWESTER, A. B., PD. M., PD. D.,

Associate Professor of Education.

A. B., Butler College; B. Di. and M. Di., Warrensburg Normal School; Pd. M. and Pd. D., New York University; Special Student of Psychology and Education, Harvard, Jena, and Berlin; Principal, Adrian, Mo., 1889-1891; Department of Pedagogy, Normal School, Warrensburg, Mo., 1892-1905; Department of Education, Normal School, Bellingham, Wash., 1907-1917; Exchange Professor of Psychology, Normal School, Fitchburg, Mass., 1916-1917; Psychological Examiner, U. S. A., 1917-1918; State Manual Training Normal, 1919—.

LAURA MAE CARTER,

Assistant Librarian.

Graduate of Kearney High School, Kearney, Neb.; Short Course, Wisconsin Library School, 1908; Assistant Librarian, Kearney Public Library, 1904-1908; Denver Public Library, February-August, 1919; State Manual Training Normal, 1919—.

OCTA IRENE DYER,

Assistant Librarian.

Graduate of Pittsburg High School, 1911; Graduate of Public School Music Department of Baker University, 1914; Instructor in Piano and Voice, Wheelock Academy, Millerton, Okla., 1914-1915; Instructor in Latin and German, Snyder High School, Snyder, Okla., 1915-1918; Instructor in Latin, Vinita High School, Vinita, Okla., 1918-1919; Assistant Librarian, State Manual Training Normal, 1919—.

H. T. JAMES,

Instructor in Machine Shop.

Apprentice one year with Doman Gas Engine Co., Oshkosh, Wis.; Apprentice three years with Kissel Car Co., Hartford, Wis.; Machinist one year with Mitchell Motor Car Co., Racine, Wis.; Automatic Machine Job Setter and charge of Automatic Department one year; six months with Jeffrey Motor Car Co., Kenosha, Wis.; Machinist and Toolmaker in Experimental Department one year and six months, Little Chief Tractor Co., Sand Springs, Okla.; Toolmaker one year with U. S. Government, Seattle, Wash.; Instructor Machine Shop and Tool Tempering Department, State Manual Training Normal School, 1919—.

EVELYN JOAN METZGER,

Assistant Professor of Drawing.

Graduate of Chicago Art Institute, 1909; Postgraduate Work at New York University, 1914-1915; Instructor in Design, University of Arkansas, 1910-1919; Assistant Professor of Drawing, State Manual Training Normal School, 1919—.

NORA NEAL,

Assistant Professor Piano.

Teacher's Certificate and Graduate of the American Conservatory, Chicago; Pupil in Piano of Heniot Levy, Theory, Hubbard William Harris, Victor Gorwood, and John J. Hattstaedt; studied organ with Sara Laurence Beals, Chicago; won two gold medals for excellence in piano; taught piano and organ for three years in Kansas Wesleyan College of Music, and held position of organist in the First Methodist Episcopal Church, Omaha; Piano Instructor, State Manual Training Normal School, 1919—.

HENRIETTA PRIBNOW, B. S.,

Assistant Professor of Home Economics.

Student Beloit College, Beloit, Wis., 1907; Diploma, Boston School of Domestic Science, Boston, Mass., 1910; Dietitian, Battle Mountain Sanitarium, Hot Springs, S. D., 1911-1913; Instructor of Household Arts, Wartburg Teachers' Seminary, Waverly, Iowa, 1914-1916; Supervisor of Household Arts in Public Schools, Oshkosh, Wis., 1918; B. S. and Teacher's Diploma, Teachers' College, Columbia University, 1919; Assistant Professor of Home Economics, Kansas State Manual Training Normal School, 1919—.

LAURA L. REMER,

Primary Critic Teacher.

Supervisor's Certificate and Ph. B. from University of Chicago, 1917; Primary Critic, Iowa State Teachers' College, 1917-1919; Primary Critic, Manual Training Normal, 1919—.

ANNE DEN BLEYKER,

Primary Critic Teacher.

Supervision Diploma and B. S. from Columbia University, 1919; Primary Critic Teacher, State Manual Training Normal, 1919—.

HAROLD F. SCHORY, A. B., B. O., M. A.,

Professor of Public Speaking and Expression.

B. O., Capitol College of Oratory and Music, Columbus, Ohio; for three years a private student of Public Speaking and Expression under Frank S. Fox, M. A., Ph. D., Columbus, Ohio; A. B. and M. A., Ohio State University; Professor of Oratory and Elocution, Columbus, Ohio, 1914-1916; Head of Department of English and Public Speaking, Franklin College, New Athens, Ohio, 1917-1918; experienced lyceum entertainer and professional orator; Head of Department of Public Speaking and Expression, State Manual Training Normal, 1919—.

AGNES SAUNDERS, A. B., A. M.,

Professor of Home Economics, and Joint Director.

A. B., Colorado State Teachers' College, 1912; Instructor, Colorado State Teachers' College, 1912-1914; Head of Department of Food, and Dietitian, Utah Agricultural College, 1914-1917; A. M., Columbia University, 1918; State Supervisor of Home Economics, Maryland, and Acting Dean of Home Economics, Maryland State College, 1918-1919. Joint Director of Home Economics, State Manual Training Normal School, 1919—.

G. W. WEEDE, B. S., D. D. S.,

Director Physical Education and Athletics for Men.

B. S., Cooper College, Sterling, Kan., 1901; D. D. S., University of Pennsylvania, 1906; Graduate, Peeso's Post-Graduate School, Summer, 1907; Football Coach, Washburn College, Topeka, Kan., 1906-1909; Director of Athletics, Cooper College, Sterling, Kan., 1910-1917; Y. M. C. A. Director of Athletics, Camp Funston and Fort Riley, 1918; University of Illinois Summer School for Physical Directors, 1919; Director of Physical Education and Athletics for men, Kansas State Manual Training Normal, 1919—.

J. R. WELLS, B. S.,

High School Department of Biology.

Life Certificate, State Manual Training Normal, 1915; Special Work in University of Chicago, Summer School, 1915; Bachelor of Science, State Manual Training Normal, 1919; Student Assistant in Department of Biology, State Manual Training Normal, 1913-1914-1915; Head of Department of Biology, Montgomery County High School, Independence, Kan., 1916, 1917, 1918; High School Department of Biology, State Manual Training Normal, 1919—.

ERNEST HAGLER,

Instructor in Automobile.

Graduate of American Technical Automobile Society of Chicago, 1908; Experienced Garage Foreman; Garage Owner of twelve years experience; State Manual Training Normal, 1919—.

Special Assistants.

SUMMER TERM, 1919.

Supt. C. S. Risdon, Education.
G. N. Nyman, Industrial Arts.
Joseph Parks, Industrial Arts.
W. L. Friley, Industrial Arts.
Bertha Spencer, Industrial Arts.
A. B. Steele, Biology.
Lorene Bailey, Biology.
Dr. A. H. Bernhard, Chemistry.
Supt. H. D. Ramsey, Education.
Supt. J. F. Barnhill, Mathematics.
Dr. C. F. Hodge, Biology.
Kenneth Kaufman, Languages.
Mrs. Marcia Mendenhall, Languages.
Robert Hart, Physical Science.
Dora Otto, Domestic Science.
Agnes Kohlsorn, Domestic Science.

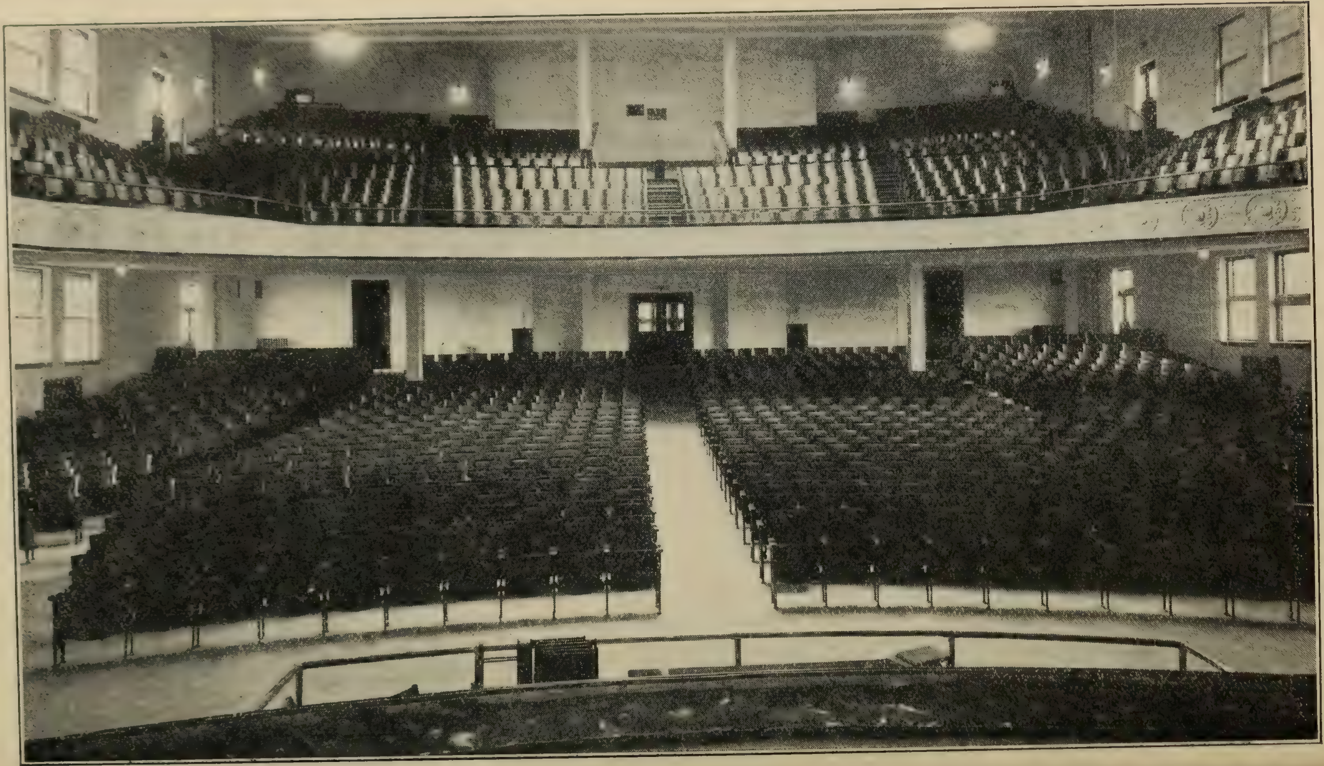
Student Assistants.

SUMMER TERM, 1919.

Carmen V. Leblicq, French.
Vera White, Commerce.
Frank Vietti, Commerce.
Ernest Schlichting, Commerce.
Iva Doles, History.
Claude O'dell, Biology.
Marion Ennis, English.
Reve Brewer, Geography.
Glen Litton, Geography.
Faye Blackett, Physical Education.
Elenora Skourup, Mathematics.
Henrietta Crotty, English.
L. L. Sutherland, Biology.
Harold Alyea, Physical Education for Men.
Vena Connet, Education.
Eva Cunningham, Household Arts.
Vernon Ellis, Physical Education.
E. A. Flottman, Physical Sciences.
Finnis Green, Biology.
Marian Griffis, Library.
Leo E. Hudiburg, Physical Science.
Glenn B. Litton, Geography.
Thomas Mason, Physical Education.
Robley Matthews, Biology.
Robert Mendenhall, Physical Sciences.

GRETCHEN MORRIS, Physical Education.
ALLEN PARK, Physical Sciences.
F. M. STOFFER, Biology.
LAUNCE SUTHERLAND, Physical Sciences.
MARY L. WALTER, English.
GEO. O. WHITE, English.
T. F. ZIEGLER, Physical Sciences.
JACK DOTY, Laboratory Assistant in Applied Mechanics.
EVA EDWARDS, Assistant Registrar.
VERA CUNNINGHAM, Secretary to Dean for Women.
GWEN WILLIAMS, Stenographer for Extension Department.
CORA KOHLER, Stenographer.
GLADYS BRITTON, Stenographer for the Departments.

J. H. CAPPERS, Custodian and Head Engineer.
C. F. ROBINS, Janitor.
W. J. BENTON, Janitor.
J. L. GREEN, Janitor.
M. S. WIMAN, Fireman.
WILLIAM SPENDLOVE, Landscape Gardener.



AUDITORIUM, CARNEY HALL.

General Information.

LOCATION.

Pittsburg, the metropolis of southeastern Kansas, is located 130 miles south of Kansas City. It has four lines of railroad—the Missouri Pacific, Santa Fe, Frisco, and Kansas City Southern—and over 100 miles of interurban railway. It is second to no other city in the state in its accessibility, with more than twenty passenger trains per day and interurban cars every few minutes.

Pittsburg is a city of 20,000, located in one of the greatest industrial sections of the state. There are hundreds of coal mines surrounding the city in all directions, and millions of tons of coal are mined here annually. The main shops of the Kansas City Southern between Kansas City and Port Arthur, Tex., are located here, employing 2,000 men.

Our population is truly cosmopolitan. At a recent reception to the governor he was greeted in thirty-two different languages. While this is true, they are a loyal people. No war measure came to our city that did not "go over the top."

The State Manual Training Normal School is serving the people and state in training teachers and industrial workers to function in the life of society wherever these people may chance to live. At present she has representatives doing efficient work in the Educational, Industrial and Social life in almost every country in the civilized world, and her ambition is to become one of the greatest agents in the state in Americanizing, not only our immediate community, but spreading that sentiment to the uttermost parts of the earth.

Pittsburg is also a city of fine homes, paved streets, and has one of the finest natural parks in the state. All that she is and all that she has she lays at the feet of the students who attend the State Manual Training Normal School.

MATERIAL EQUIPMENT.

The Normal occupies a campus of fifty-five acres adjoining the city upon the south. This piece of land is admirably situated for our institution. It is being put into condition very rapidly. There are located upon this campus at the present time four splendid permanent buildings, and three large temporary buildings.

RUSS HALL.

This building was erected in 1907 and 1908. It was destroyed by fire in June, 1914, and has been rebuilt and thoroughly equipped. Everything that could be done to make it a more substantial, beautiful and serviceable building has been done. This building now has seventy-five rooms, less the corridors and halls. More than three-fourths of the building is fireproof. Considerable change was made in the exterior and in the interior, especially the top floor, in this rebuilding. Our halls and corridors are beautifully tiled, and the grand stairway at the front entrance, leading to the second floor, is a work of art and beauty, being constructed of the best grade of marble.

In this building are to be found the Administration Offices, the College of Liberal Arts and a portion of the training school.

INDUSTRIAL ARTS BUILDING.

This building covers more ground space than Russ Hall. It is used exclusively for all work in Industrial Arts. Here are excellent shops equipped with the latest and best machinery that can be had, and doing all kinds of woodwork, sheet metal, forge, foundry, machine shop, automobile, and electrical work. It is well lighted and ventilated, and furnishes an opportunity for these various line of work unequaled by any other in the West.

POWER AND HEATING PLANT.

The power and heating plant is the third of these permanent buildings. It has been designed and located with a view of using it for heating and lighting the several buildings and others which must soon be gathered about it to carry on the work of the institution.

CARNEY HALL.

For several years the institution has been crowded beyond its capacity, the work of Home Economics, Biology, and Physical Sciences being crowded into rooms arranged for academic purposes greatly hampering the instructors in carrying out their high ideals along their respective lines. Through the generosity of the legislature of 1917, an appropriation of $200,000 was made for the purpose of erecting a much needed Science building. Owing to the war, scarcity of labor and difficulty in securing materials, this building was not completed until December, 1919; however, it was sufficiently advanced that at the beginning of the school year 1919-'20 the Departments of Home Economics, Biology and Physical Sciences moved in before it was finished. This building is now complete and is said to be one of the finest educational buildings, if not the finest in the state. Its laboratories have been equipped with the best equipment that could be had. It also has one of the finest auditoriums in the state with a seating capacity of 2,500. The outward appearance is most beautiful, and the interior is equally artistic. The building was named by the legislature as a fitting tribute to the memory of ex-Governor Carney, Governor of Kansas, 1863-1865. It is the aim of the institution to have space in this building for a collection of historical relics. Many war relics have already been received, and if you are a friend of S. M. T. N. and have something to contribute to this end we shall be pleased to have it.

TEMPORARY BUILDINGS.

CAFETERIA. We have a large temporary wooden building in which the cafeteria is now located. While this building is a mere temporary structure, it has been fitted up in a most convenient and sanitary manner with the best cooking equipment that could be had and admirably serves the purpose for which it is designed. We are able to feed 1,000 people in a very satisfactory manner.

The management of the cafeteria is under the direct supervision of the head of the Department of Home Economics, thus insuring the selection and preparation of the best kind of food in the best sort of way for our students.

THE BARRACKS. In 1918 when the S. A. T. C. made its appearance upon our campus it became necessary to erect a temporary barracks. Since the disbandment of the S. A. T. C. this building has been converted into a temporary gymnasium and an automobile machine shop. By some additions we have been able to accommodate our young people in their gymnastic work in this building in their indoor games. It also furnishes very good quarters for automobile repair work.

BOARD AND ROOMS.

Excellent table board may be had at $4 to $6 per week in private families or in groups.

A cafeteria operated under the management of the College has capacity to accommodate 800 to 1,000 daily. Meals and lunches are served here at approximate cost, ranging from $3.50 to $5.00 per week.

Many teachers find it both pleasant and profitable to take a cottage or suite of rooms, do light housekeeping, and lunch at the cafeteria. By this method the cost of meals may be reduced to as low as $3.50 per week.

Rooms cost, unfurnished, $2 to $5 the month; furnished, $7 to $10 the month, according to size and convenience. Furnished houses rent from $6 to $18 the month. It is not necessary to engage rooms before one comes. It is more satisfactory to see the rooms before making definite engagements. An extensive list of suitable boarding and rooming places is kept on file in the library at the school to aid students in securing favorable location. Men and women are not expected to room in the same house. In houses where women students are rooming, suitable arrangements for the use of a parlor for the reception of guests must be made.

STUDENT WELFARE.

No subject is given more serious consideration by the faculty than the physical and moral welfare of its students. While a student may have enjoyed a certain privilege in his home which was considered perfectly proper in one's own home, yet the great responsibility assumed in the care and training of young men and women frequently warrants the faculty in asking the students to give up some special privilege that has been thoroughly proper in his own home which would not be exactly right when living away from home. Women students do not room in houses where there are men lodgers without permission from the Dean for Women and the Rooms Committees.

DEAN FOR WOMEN.

Not only in the matters pertaining to school life, but in all activities which count for general social efficiency, the Dean for Women takes direct interest in the life of every girl enrolled in the institution. Applications for loans from the students' loan fund to women students are usually made through the Dean for Women. Parents will find the utmost courtesy and interest shown by the Dean for Women towards any correspondence which may arise from the solicitude which parents feel when they send their daughters away from home to college.

CHURCHES.

Pittsburg has a fine lot of churches. The leading denominations have well-equipped and beautiful buildings and as fine a lot of ministers as can be found anywhere. These ministers take special interest in the student body and do all in their power to make the very best church environment for students and faculty. A large per cent of our faculty are active workers in these churches, holding positions as teachers and superintendents in the Sunday schools, and thus coöperating in this good work. A prominent minister who had been a college president said he considered the moral atmosphere as good here as any school he knew.

BIBLE STUDY.

For ten years a regular Bible-study class has been conducted by Dean Trout. At first this work carried no credit, but for the past three years the work has been regularly scheduled, assignments made and recitations conducted one hour a week. Students have a rare opportunity in this course, as the instructor is a regular graduate of one of the foremost seminaries of the East. The idea is not to teach dogma and doctrine but to lead the student to understand the great social principles underlying the teaching of the Scriptures, and help to an understanding of the fatherhood of God and the brotherhood of man.

Students now have opportunity to take courses in Christian Evidences, Ethics, Old Testament History, New Testament History, and the Social Teachings of Jesus, all of which is intended to help these young people in forming right opinions and assuming right attitudes toward the Bible and the Christian religion.

THE ALUMNI.

Few institutions, if any, can boast of so large an alumni as S. M. T. N. An institution only fifteen years old with an alumni of 1,480 is something of which we are justly proud. No institution ever had a more loyal bunch than our alumni. They have never failed, either as individuals or groups, or as an association, to do their whole duty toward S. M. T. N. The Alumni Association was organized in 1905 and is engaged in holding reunions at all state and district associational meetings. Where there are sufficient members in any school system they organize S. M. T. N. clubs, and thus make their alma mater felt and appreciated in these communities.

The association holds its annual meetings, at which officers are selected, at the institution on commencement day, at which time a banquet is served. The present officers are: Miss Bertha Lance, president; Miss Maud Skinner, vice-president; Mrs. Fred M. Campbell, secretary.

Miss Roseberry is acting as secretary at the present time. Some very important changes have been made whereby members of the graduating class may become life members upon the payment of a fee of $3.

STUDENT ORGANIZATIONS.

ATHLETICS.

Intercollegiate and intramural athletics are carried on by the Department of Physical Education. Intercollegiate athletics are supervised by an Athletic Council composed of five faculty members and five students. The institution is a member of the Kansas Intercollegiate Athletic Conference. Schedules are arranged with other colleges in football, basket ball and track athletics. No intercollegiate schedule is maintained in baseball, but this sport is maintained as an intramural activity.

Interclass and intramural tournaments and leagues are held for both men and women students in basket ball, volley ball, and baseball. There are no intercollegiate or interschool contests for women students.

ATHLETIC FIELD.

The facilities for outdoor athletics and general recreation are first-class. The new athletic field, on which $3,000 has been expended, has been available for use since the spring of 1918. The plans for the next two years call for the expenditure of $7,000 in the further improvement and extension of the grounds. A permanent up-to-date grand stand seating 2,500 spectators is to be erected before the opening of the 1920 fotball season.

The field has a quarter-mile track, with a maximum width of twenty feet, with the inside and outside edges marked with concrete curbs. The track has two coats of cinders. Cinders will be added each year to the cinder path and the whole course ultimately drained with tile.

Inside the space marked by the inner curb of the track there is an area 430 feet long by 207 feet wide. The surface of this space is practically level, except for the crowning effect produced by having the middle of the field higher than the edge, which insures good drainage of the playing surface.

Lying to the east of the regular field there is a practice field. It is well drained, so that it can be used in all kinds of weather, thereby saving the sodded surface of the regular field.

Further plans for intramural sports make inadequate the four tennis and four volley ball courts now occupying a central location on the campus. Several additional courts will be located on the athletic field proper and a commodious field for the women to play soccer football and hockey will be installed soon.

GYMNASIUMS.

Until the needed funds for a new gymnasium are appropriated the indoor athletics for men will be taken care of on a very suitable floor recently made available by remodeling one of the S. A. T. C. barracks. A playing space of 40 feet by 80 feet is thus provided with no posts or obstructions. Elevated seats on one side the court accommodate 500 spectators.

The women have a separate gymnasium in Russ Hall 50 feet by 50 feet. It is well equipped for the general gymnastic and floor work carried on by the regular classes.

"M" CLUB.

This club is composed of men who have the honor "M" in athletics. Its purpose is to better the athletic interests of the college and attract men to the institution in a legitimate way.

LITERARY SOCIETIES.

There are two well-organized literary societies, each having a well-furnished and equipped room for its meetings. They are the Manus Verez and Porterean societies. The purpose of the organization is to furnish its members an opportunity to develop along literary lines and make this line of work of value to the community life where they teach. The programs are of a miscellaneous character, combining oratory, music, readings, debates, short stories, and the like. Besides the literary work of these societies, they furnish frequent and splendid opportunities for the development of the social life of the student.

DRAMATIC ART CLUB.

This organization is composed of the students who are especially interested in dramatics, and furnishes an opportunity for the cultivation of the highest type of expression. The organization is for the student and not the student for the organization. The best professional plays, mostly manuscript, are produced in a truly professional manner. The plays are cast not according to the merit of the student but according to his needs. Through this democratic spirit, together with a cultured and refined atmosphere at its monthly meetings and formal banquets, the club has become a very real factor in the life of S. M. T. N.

THE FORUM.

This is a student organization open to all students of S. M. T. N. who desire a knowledge of argumentation and some practice in debate. After the principles of argument, briefing, etc., are set forth by an instructor of public speaking at the beginning of the term, the student proceeds to make their application to various live questions of the day. The club holds its regular meetings on the first and third Tuesdays of the month at seven o'clock p. m. From this club our debate teams are chosen. The officers of this club, together with three members of the faculty appointed by the President of the institution, constitute the Oratorical Council, which has charge of all contests in debate and oratory.

Y. W. C. A.

In all that tends toward the highest intellectual advancement, in all that sweetens true social pleasures, in all that aims towards crowning Christian culture, the Y. W. C. A. is preëminent.

This organization on the campus is ten years old. Why does it live? In a practical way, the Y. W. C. A. assists the Room Committee in helping students locate in the various homes open to student roomers.

A girl's name on the Y. W. C. A. membership roll is equivalent to her entering a service of loyalty and love in any worth-while student activity.

The range of service and fellowship reaching out from the office of Dean for Women is made possible by the untiring coöperation given by the Y. W. C. A. to every activity which concerns the welfare and happiness of the girls of the institution. In a social way, it plans receptions and parties to old and new students. It also gives the annual breakfast to the senior girls. In a spiritual way, it maintains a Y. W. C. A. chapel every Tuesday morning at the assembly hour.

Officers—Mary Walters, president; Lucy Clinkenbeard, vice president; Leota Spence, secretary; Margaret O. Mitchell, treasurer.

Cabinet—Zoe McGonigle, Doris Copher, Mable Marshall, Marion Griffis, Agnes Crowe.

MUSICAL ORGANIZATIONS.

The principal organizations are the Male Glee Club, Polymnia Club (a girl's organization), the orchestra, and the band. These organizations are very popular, both in the school and outside. They meet regularly twice weekly for rehearsal, and during the school year present several concerts. The active membership of the organization is necessarily limited and is chosen from the best talent of the school.

MUSIC FESTIVAL.

For the past five years the institution has organized and drilled a great chorus of from three to five hundred voices for the purpose of putting on a special week of music festivities. We have always had during this festival some special musical attraction outside the institution. For three successive years we had the Minneapolis Symphony Orchestra. Last year we presented the Metropolitan Quartet, composed of Madames Alda and Lazzari and Messrs. De Luca and Martinelli.

The music lovers of adjoining cities have organized choruses under the direction of the head of the Department of Music, and these have been merged with our great student chorus and has served in making the annual musical festival second to none in the West.

In addition to this great chorus we have always selected artists for the solo work, thus enriching the splendid feast of good things musically. For the festival of 1920 greater artists will be secured than we have heretofore had. Some of these have already been engaged, and with great care we are selecting the others. Last year we added the new feature of an interstate high-school musical contest which was a success far beyond our expectation. We shall continue this feature which furnishes young people, either as soloists or musical organizations in our high school, an opportunity to know what is being done in other high schools in other states.

THE BAND.

The student body maintains a splendid band under the direction of Prof. Walter McCray, who is well known not only as a musician of rare ability in the direction of all sorts of music, but a specialist as a band leader. This furnishes an excellent opportunity not only for young people who desire to continue their knowledge of band music, but for those who may desire to begin the study of some band instrument.

It may be of interest to the students to know that for the past four years our director has had complete charge of the municipal band of this city and has built up one of the best organizations in the state.

ORCHESTRA.

We have an orchestra under an expert leader. The progress this organization has made since its organization is phenomenal. Students musically inclined have ample opportunity for the cultivation of their talent.

OTHER ORGANIZATIONS.

INDUSTRIAL ARTS SOCIETY.

During the year of 1915 the instructors interested in the industrial subjects, together with a number of students who were likewise interested in these subjects, formed an organization known as the Industrial Arts Society. The purpose of such society, as stated in the constitution, is to encourage the advancement of industrial education by meeting for the discussion of industrial subjects, by the publication of such matters as may be deemed desirable, by establishing fraternal relations among the friends of industrial education, and by granting the privilege of membership to such students as during their course have given special promise of future achievement.

SCHOOL PUBLICATIONS.

MANUALITE.

The *Manualite* is published monthly during the school year by the students and alumni of the school. There is an editorial staff of eight students, elected annually.

TECHNE.

The purposes of this magazine are: To set forth the distinctive work of the State Manual Training Normal; to publish papers that will be of interest to its readers; to assist teachers to keep in touch with the development in their subjects; to foster a spirit of loyalty that will effect united action among the alumni and former students in promoting the best interests of the institution. The magazine is published every month except August and September. Alumni, teachers and friends of the Normal are invited to send communications on such subjects as fall within the scope of the magazine to the committee in charge. Address communications to *The Techne*, State Manual Training Normal, Pittsburg, Kan. It is sent free to all alumni and students of the State Manual Training Normal, and to teachers, school officials and citizens on request.

THE KANZA.

For several years the Junior class has had charge of the editing and publishing of the *Kanza*, the annual of the school. This class has brought some excellent books to our student body, and this year will be no exception. The experience gained by those interested in putting out this splendid book is of such a nature that it will serve the student in coming life as a helpful means of understanding the scholarship and mechanical ability required in the preparation of such periodicals, which may serve in a very practical way for them in days to come.

WORKING FOR EXPENSES.

The State Manual Training Normal, being located in a city larger than that of the average state institution, and being also in a district which is thoroughly industrial, a splendid opportunity obtains at all times for many students to earn a part or all of their expenses, by working in homes, stores, factories, offices, garages, etc. In past years hundreds of students have helped themselves in this manner. In truth, some have begun without a week's expenses provided for, and have, by industry and frugality, completed their course and graduated with money in their pockets. We have a faculty committee which coöperates with its students in this matter.

STUDENTS' LOAN.

A movement has been started by the Women's Federated Clubs to assist worthy and needy young people in a financial way. A certain sum will be loaned to approved students at a low rate of interest.

FEES.

All fees except hospital fees are to be paid at the beginning of each semester before admission to class.

Hospital. Each school year, or fraction thereof, all students in the institution pay $1 per year to be used as a fund for the care of the sick. This fee will not be refunded.

Nonresident Fees. Nonresidents will pay, in addition to other fees, a fee of $30 per year, payable in advance, by terms, as follows: $15 per term of twenty weeks; $10 for summer term of ten weeks. These fees will not be refunded.

Incidental Fee. Each student will pay a fee of $7 per semester, or fraction thereof, and the same for the Summer Session. Students taking work in the sciences, manual training, and other training where a considerable amount of material is used individually, will be charged the actual cost of the material used by them.

Correspondence Work Students taking work by correspondence pay fees indicated in special correspondence circular.

Music. For fees in the music department see under that head.

Examination. Students taking special final examinations pay a fee of $1 for each examination taken. Students regularly enrolled pay the regular examination fee of $1 for the privilege of taking the county examination under the supervision of the officers of the Normal School. No credit is given for certificates of enrollment in county institutes.

Hospital Fund. This fund is provided by the fee of $1 per year paid by all students in the college and secondary courses. It is used to pay salary of the head nurse, for such emergency hospital supplies as are necessary, and for unavoidable expenses required for proper care of the sick. The hospital fund has met with generous approval and has contributed to better general health, and to the comfort of the students.

TYPEWRITER. Students taking typewriting pay a special fee of $1 per semester for the use of machine.

LABORATORY FEE. A small fee to cover cost of material is charged each student pursuing laboratory courses.

THE SUMMER SCHOOL.

THE SUMMER SCHOOL opens immediately after the close of the school year. Practically all courses outlined in this catalogue are given either in full or part during the Summer School. Most of the students are teachers of experience who wish to prepare themselves more fully for their work. Also many teachers desiring to advance the grade of their county certificate may carry such work as they desire to pass county examination in, and thus qualify themselves and at the same time secure credit toward a state certificate. Also, noted educators give special courses and lectures for the benefit of the Summer School students. Owing to the fact that a large number of superintendents of the leading school systems of the state attend our Summer Session, it affords a splendid opportunity for teachers and superintendents to become acquainted. For further information see section VII, pages 179-216.

REGULAR LECTURE COURSE.

Under the direction of a faculty committee a general lecture course is put on each year. This course is not the old-time type of lecture course. It is the policy of the committee to select the very choicest attractions to be had, thus assuring the student body of the very best talent and most desirable things from the standpoint of both entertainment and instruction.

Students are admitted to all these lecture-course attractions on the student activity ticket.

SPECIAL FEATURES.

During the year prominent educators and leaders are invited in to lecture to the student body. The institution also has a very fine motion-picture machine, which furnishes entertainment and instruction along the special lines of work of the various departments.

TEACHERS' APPOINTMENT BUREAU.

The Teachers' Bureau consists of a committee of the faculty, which seeks to place each graduate of the institution in the position best adapted to his qualifications. These qualifications are determined by a careful examination of the student's complete record as shown by his work done, not only in the Training School but also in the various departments of the College. The Bureau seeks in this way to do justice to every student, and is able to give exact and discriminating information to school officials seeking teachers. During the current year the work of the Bureau has been extended to include all graduates of the College teaching in the state, with the view of giving them all possible assistance in advancing their professional interests. Full and confidential information will be sent school officials concerning candidates. It is our policy not to send out general letters of recommendation for indiscriminate use, but to recommend a candidate for the particular position that he is qualified to fill. A large number of the members of the graduating classes have had considerable experience in teaching besides that obtained in the Training Department. There are among our students and graduates persons admirably fitted for the various high-school principalships and superintendencies. School authorities are invited to visit the Normal and see the students at work, and make selections of teachers after a personal interview. All letters of inquiry will receive careful attention.

EXTENSION WORK.

The State Manual Training Normal School now has a well-developed and well-organized system of extension work, which is proving of great value to teachers in service and to others contemplating entering the profession. The work is so planned that students outside the institution, under certain limitations, can pursue the same courses of study and receive the same credit as those within the institution. By this means industrious students are enabled to increase their efficiency while in service, and also reduce the time of residence required to secure completion of a course in the institution, but no amount of extension work will be accepted as a substitute for the minimum residence requirement.

The location of the Normal in the center of a network of interurban and steam railways, furnishing students and faculty easy and rapid means of transportation, has greatly contributed to the success of this character of work. During the current year more than 700 students, teachers in service, have received instruction from the institution. Superintendents accept this work in lieu of professional work required, and speak in the highest terms of its value in improving the teaching force of the city or community.

Extension work is offered by three different methods—correspondence work, class extension, and Saturday work.

CORRESPONDENCE WORK.

Where the nature of the subject matter will permit, and where extensive laboratory work is not required, courses of instruction will be offered by correspondence. The student will furnish outlines, with review topics, and furnish such other evidence that the course is mastered as the head of the department may require.

CLASS EXTENSION.

Under this plan classes of twelve or more are organized and a member of the Faculty meets the class regularly every week or every two weeks at the place in which the class is organized. Outlines and reviews are required as in regular correspondence work, with the additional advantage that the student comes in personal contact with the teacher. This character of work is regarded as meeting residence requirements within prescribed limitations. This plan is proving very attractive and effective. Classes in more than thirty cities and towns have been organized the past year.

SATURDAY WORK.

Courses in which laboratory work is required are offered to such students as find it possible to reach the institution on Saturday and spend the day in the laboratories. The laboratories are open and competent instructors are provided for this work.

CREDIT.

The extension courses offered, as outlined above, are identical with the courses offered to students within the institution, and by the same members of the faculty, and the student in extension work meets the same standards and degree of efficiency in his work as the student enrolled in the school, and receives the same credit for his work.

INFORMATION.

A special extension bulletin, giving list of courses, credit offered, limitations of work that can be taken, and other detailed information concerning this phase of work, will be issued early in September of each year. Students interested should write directly to the Registrar for this bulletin.

AMOUNT OF WORK.

No person will be permitted to carry more than four hours per semester by correspondence, class extension, or Saturday work.

LECTURES.

The faculty of this institution has always been ready to coöperate with the superintendents of smaller cities in aiding them to give entertainment to their people. In some instances a complete lecture course has been furnished by our faculty.

In addition to this sort of work we are ever ready to send a speaker to all gatherings of teachers to assist in their work. We want superintendents and teachers to feel free to call on us at any time, anywhere, and they will find a ready response. Our institution touches a large field of advanced educational thought of the most practical sort, and we want to serve you. By communicating with the president satisfactory arrangements can be made.

EXAMINATIONS FOR ADVANCED STANDING.

Students may, upon good and justifiable grounds, be permitted to take examinations for advanced standing by the permission of the Accrediting Committee and the head of the department in which the examination is to be taken, in such subjects as may be agreed upon, it being understood that no student will be permitted to take such examination as would in any way jeopardize the standing of the institution in its affiliated relations.

Application for advanced standing should be made at the first entrance of the student to the institution. Students who expect to take examinations for advanced standing or submit credits or credentials from other institutions for advanced standing should, if possible, send these credentials and evidences of work completed in other institutions to the Registrar of this institution before the time of enrollment, and thus save themselves a lot of worry and waiting at the beginning of the semester, when they should be classified and enrolled in their class work. These credentials should be sent two or three weeks before the opening of the semester, that the Accrediting Committee may have opportunity to evaluate them and fix the standing of the student. The Accrediting Committee can give no estimate of the advanced standing of prospective students unless these conditions are complied with.

The committee cannot consider applications for examination for advanced standing which are made later than ten days after matriculation, and if the applicant is permitted to take such examinations, these examinations must be taken not later than the middle of the first semester.

No advanced standing credit will be given for work done during a four-year course of study in a high school, academy or preparatory school. No student will be permitted to take examinations for advanced standing or credit who is carrying the maximum amount of work either by extension, correspondence or residence. The maximum advanced-standing credit for work done in a junior college is sixty hours plus physical training. In no case will work done in a junior college be accredited as the work of the senior college.

All inquiries and correspondence concerning advanced standing should be addressed to J. F. Mitchell, Registrar, Pittsburg, Kan.

ORGANIZATION.

School Year. The school year is divided into two semesters of approximately eighteen weeks each, the work of the second semester being so arranged that teachers may enter in April, after completing a seven months' term, and obtain one-half semester credit. There is also a summer term of nine weeks.

ENROLLMENT.

While it is advisable for students who are entering to enroll at the beginning of a semester, they may, upon sufficient reason, enroll at any time. Credit, however, is not assured to those who enroll later than one week after the opening of a semester.

AMOUNT OF WORK THE SEMESTER.

A student of college grade is expected to take not to exceed seventeen credit hours of work the week, for each semester, unless a larger assignment is granted by the accrediting committee.

THE CREDIT HOUR.

For each credit hour of any course in the College the student is expected to devote himself for three hours, either in the classroom, laboratory, or outside preparation.

Degrees, Diplomas and Certificates.

DEGREES.

Students who have attended the State Manual Training Normal School for one year, having completed at least thirty semester hours of work in this institution, with at least five hours in the department in which he is majoring, and those students who have completed any of the four-year college courses, including at least eight hours of professional work in addition to that required for the life diploma, chosen from Junior and Senior subjects, will be admitted to the degree of Bachelor of Science in education, which degree is a life certificate to teach in any elementary or high school in the state of Kansas.

At least forty hours must be selected from the junior and senior subjects.

No student may offer for the degree more than twenty hours in any subject in which a major is not offered.

No more than eight hours of commerce will be accepted toward a degree.

One hundred twenty-four credit hours of work are required for graduation from the degree course. Four hours of this work are in the Physical Education Department. A credit hour consists of one class period per week in a subject for one semester, except laboratory, drawing, manual and physical training subjects, in which two class periods per week for a semester constitute a credit hour.

No more than four hours college credit of the one hundred twenty-four will be allowed for practice courses in physical education.

LIFE CERTIFICATE COURSES.

Students who have attended the State Manual Training Normal School one semester, and who have met the requirements of the first two years of any of the college courses—which must include English, or Public Speaking, 4 hours; Physical Education, 2 hours; Professional, 12 hours—are entitled to a life certificate for elementary two-year and junior high schools.

KINDERGARTEN CERTIFICATE.

On completion of the kindergarten course—a course of two years, presupposing high-school graduation or its equivalent—a diploma is issued which, in accordance with a law passed by the legislature of 1907, is a certificate valid for kindergarten work in the state of Kansas.

PRIMARY CERTIFICATES.

Those persons completing the two-year primary course will be given a life certificate, also a special proficiency certificate to teach primary work. For outline of course see page 92 of this catalogue.

INTERMEDIATE GRADE TEACHERS' CERTIFICATES.

Those persons completing the two-year grade teachers' course will be given a life certificate, also a special proficiency certificate to teach in the grades. For outline of course see page 92 of this catalogue.

RURAL TEACHERS' CERTIFICATES.

Those persons completing the two-year rural teachers' course will be given a life certificate, also a special proficiency certificate to teach in the rural schools of the state. For outline of course see page 93 of this catalogue.

JUNIOR HIGH-SCHOOL TEACHERS' COURSE.

This course is planned for those desiring to teach in junior high schools, rural high schools, and the high schools of smaller towns. The present organization of these schools requires teachers well prepared to teach at least two lines of work effectively, and this course is arranged to meet those requirements. Those who meet the requirements will be given a life certificate, also a special proficiency certificate showing the lines of work in which specialization has been made. For outline of course see page 93 of this catalogue.

SPECIAL CERTIFICATES.

SPECIAL LIFE CERTIFICATES TO TEACH IN FOUR-YEAR HIGH SCHOOLS.

The Kansas Legislature of 1915 provided for high-school certificates the following law:

> "Each of said institutions (Kansas State Normal School, State Manual Training Normal School, and the Fort Hays Kansas Normal School) shall have power to issue certificates to teach manual training, domestic science, agriculture, commercial subjects, drawing, music, or other occupational subjects, upon the completion of such course of study as may be prescribed by the faculty of said institutions and approved by the State Board of Administration."

In accordance with this act of the legislature, the faculty of this institution has provided special courses for those desiring to teach music, commerce, drawing, physical education in the senior or four-year high schools. They will be issued the special life certificate upon the completion of such courses as are hereinafter outlined in this catalogue.

SPECIAL THREE-YEAR CERTIFICATES FOR FOUR-YEAR HIGH SCHOOLS.

In accordance with the above law the faculty of this institution has provided special courses for those desiring to teach industrial arts, agriculture and home economics. A special certificate will be issued authorizing them to teach such subject or subjects upon the completion of special courses hereinafter outlined in the catalogue, each of which must embrace the following: major subjects, 24; minor subjects, 12; education, 11; physical education, 2; electives, 13.

By minor is meant credit hours in subjects from any other department in which candidate is not necessarily specializing, but which he chooses as his second preference, such arrangement being made to accommodate those who may desire or be required to teach subjects outside of their department.

The choice of this minor should be made upon the advice of the head of the department in which the major is chosen.

In cases where candidates desire to be certificated to teach a minor subject or subjects, the twelve hours designated for such subjects may be considered elective, and may be chosen from any subjects in accordance with courses catalogued.

Special certificates in industrial arts and home economics, and agriculture will be issued for a period of three years, and may be renewed for a period of three years, provided thirty additional hours of college work has been completed, of which eight hours at least must have been selected from that department in which specialization is being made, and four hours in education. The special certificate may be renewed a second time only upon the completion of thirty additional hours of college work, which must be chosen to meet the course requirements of the major, and instead of a special certificate the candidate will then have completed his full college course, and will be issued the bachelor of science degree in education, which will authorize him to teach in any of the public schools of Kansas for life.

TERM CERTIFICATES.

THREE-YEAR STATE CERTIFICATE.

Students who have attended the State Manual Training Normal School one semester and completed thirty-two hours of college work, six of which are professional, are entitled to a three-year state certificate.

ONE-YEAR STATE CERTIFICATE.

Students completing the Normal High School professional course are entitled to a one-year state certificate. Regular high-school graduates who have attended the State Manual Training Normal School one-half semester and completed eight college hours of work, four of which are professional, are entitled to one-year state certificate.

COUNTY EXAMINATIONS.

Regularly enrolled students of the State Manual Training Normal School may, upon the payment of the usual examination fee of one dollar ($1), present themselves for examination for county certificates, to be conducted under the supervision of the officers of the State Manual Training Normal School, at any time when such an examination is given at any point in the state. The papers in such examination will be sent to any county designated by the applicant, there to be examined by the county board of examiners, who will issue certificates to the successful applicants under the same conditions as if the examination had been conducted under their supervision.

ELECTIVES.

Choice of electives by students should be made upon the advice of the head of the department in which the student is majoring. Students will be held responsible for this requirement.

NUMBERING OF COURSES.

All courses numbered 1 to 50 are open to freshmen and sophomores. Those numbered 51 to 100 are open to juniors and seniors. Any variation from the above will be upon the recommendation of the heads of the respective departments.

In the History Department courses 62 and 65 are open to all classes.

STANDING.

The State Manual Training Normal School is a fully accredited Teachers' College, with membership in the North Central Association of Colleges and Universities. Such affiliated standing is of material advantage to students who desire to enter other colleges or universities. The life diplomas and degrees of the institution are being accepted as state certificates in practically every state in the Union, at least wherever a state will accept a degree or diploma from an institution in lieu of a state certificate.

TRANSFER OF CREDITS BETWEEN THE UNIVERSITY OF KANSAS AND THIS INSTITUTION.

Graduates in the degree courses offering at least 120 hours of college credit, except credit from the following courses, are admitted to the Graduate School of the University of Kansas as candidate for the degree of master of science in education on the following conditions:

At least 40 hours of the 120 hours must be selected from senior college subjects.

A maximum of 30 hours will be accepted in Domestic Art, Domestic Science, and Industrial Arts.

A maximum of 20 hours in Public Speaking and 6 hours in Commerce will be accepted.

Credit not accepted as entrance to the Graduate School for the M. S. degree from the following courses: Bookkeeping, Business Arithmetic, Penmanship, Shorthand, Business English, Typewriting, Dictation and Office Practice, Commercial Correspondence, Business Forms and Spelling, Domestic Art 1*a*, Domestic Science 1*a*, History courses 61 and 65; Music, except in School of Fine Arts, Piano, Voice, Glee Club and Chorus Work not accepted.

The above courses are all considered essential in the preparation of teachers for their work. They are not sufficiently advanced and of such character as to warrant their being presented as entrance credit to graduate schools.

Candidates desiring to enter the University of Kansas who have not completed the degree course of 120 hours will receive credit hour for hour for work done in all courses in this catalogue, except as above specified.

Students desiring to enter the Graduate School of the University for the master of arts degree will be given entrance credit in so far as the courses or degree presented show substantial equivalence to the University's requirements for similar credit.

LIBRARY.

Every student, during his first term in College, should have some instruction in the use of the library; should learn where to find the material and be able to use the index to the library—the card catalogue. He should learn how to use a book in order to find readily the information desired.

While the library serves, first, the faculty and students, it also assists others outside of its immediate vicinity. It is free to all persons for general reference, and a limited circulation is permitted. Great care has been taken by the heads of departments and the librarian to make it a reference library. Students and teachers in high schools are permitted to draw out material for debates, essays, and school entertainments, and books may be taken out for use in extension classes. Great freedom is given in the matter of taking out books and other material for study, but students are expected to comply with the regulations controlling such privileges.

The books are classified according to the Dewey decimal system. They are arranged on the shelves in numerical order, those having the same class number arranged alphabetically. The card catalogue is a dictionary catalogue. It contains an author card for every book in the library, a subject card for most of the books, and a title card when the title is a distinctive one.

RULES AND REGULATIONS.

Hours: 8 to 5, 6 to 9; Saturdays, 9 to 12, 2 to 5.

All books, except those checked out for two weeks, must be returned by 8:10 the next morning. Special permission may be given to keep a book out for a longer period, provided it will not be needed in the library. The librarian should be informed of the purpose and length of time desired, otherwise the book will be counted overdue if not returned in the morning. Books drawn out on Friday should be returned on Saturday, unless permission is given to keep them until Monday morning. Books on reserve should not be taken from the library before five o'clock.

Periodicals may be drawn for home use. The current number should not be taken from the library before five o'clock and must be returned by 8:10 in the morning. Other numbers of the periodicals may be drawn out for a longer period.

All students are entitled to the full use of the library. No books or periodicals must be taken from the library until charged at the Librarian's desk. Books lost or damaged must be replaced.

LIBRARY METHODS.

This course is given one hour per week during the first four weeks of each semester and is required of all college freshmen. The purpose of this course is to teach students how to use any well-organized collection of books in a systematic and intelligent manner. Instruction in the classification and shelf arrangement of the books, the use of the card catalogue, general and special reference books, and magazine indexes is given. Many students waste valuable time in a library because they do not know how to quickly find the information they seek. The application of the principles taught in this course will prevent this loss of time.

S. M. T. N. IN THE WORLD WAR.

It is difficult to know just the extent in which S. M. T. N. participated in the great World War, but so far we have data showing that 496 former students and faculty members of this institution were actively engaged either in the training camps or across the seas.

The sad part of it is that up to date we know that many were wounded, seven of whom were killed outright or died of wounds, and six others died of disease, and one missing. We do not know how many of our brave fellows were wounded, but we are proud of all of them. They were as true to the flag of their country as they had been to the crimson and gold, and we shall be pleased to place the laurel leaves of victory upon their brows and to stand at attention in their presence when we may have the opportunity and privilege.

In addition to this number of worthy fellow students and faculty members, S. M. T. N. has been liberal in furnishing members of its faculty and student body to carry on war work and to contribute of their money for the war enterprises; but however much we may have done who stayed at home, we should feel that the 496 that left home and friends and school deserve our undying love and appreciation.

DAY TRADE CLASSES.

Under the provisions of the Smith-Hughes act, unit trade classes in automobile mechanics and machine shop practice are going, and other classes are being planned. In conformity with the provisions of the federal act, the students in these classes spend three hours, or 50 per cent of the time, in the shop upon productive work, and 25 per cent of the time upon some related subject, as related science, related mathematics, and related drawing. The remainder of the time may be devoted to either vocational or nonvocational subjects.

EVENING VOCATIONAL COURSES.

Courses covering a variety of vocational work are offered in the evening classes. Our extensive and splendidly equipped shops and laboratories afford unexcelled opportunities for those who work for their living during the day. The work is directed and taught by the regularly employed faculties, assisted by the most thorough and practical men obtainable from the industries. Many men are being attracted to this work, because they find it an exceptional opportunity to add to their everyday working efficiency. At this time classes are organized in electrical work, such as electrical machinery, automobile electricity, armature winding and telegraphy; steam engineering, mining, drafting, machine-shop practice, automobile mechanics, and commerce.

VOCATIONAL TEACHER TRAINING.

The State Manual Training Normal has been designated, with the approval of the Federal Vocational Board, to maintain courses to train men to teach in the state and federal-aided vocational schools under the federal act known as the Smith-Hughes bill. This will afford a large number of men who are now engaged in the industries an opportunity in both day and evening classes to fit themselves for these attractive positions. For further information, see section VI, pages 151 to 177.

THE COÖPERATIVE BUREAU OF EDUCATIONAL RESEARCH.

In order to help further the movement of scientific education and render assistance to progressive schoolmen in determining the relative rating of their schools, this Bureau under a director has been established.

A stock of the standard scales and tests will be carried and will be distributed to schools at a minimum cost. The following scales may now be had—Courtis Arithmetic, Reading, Writing, Geography, Supervisory, English and Composition; Ayers' Writing and Spelling Scales; Gray's Silent and Oral Reading Tests; Thorndike's Writing Scale and Visual Vocabulary Tests; Rugg and Clark's Algebra Tests; Monroe's Silent Reading Tests, Dictation Spelling Test, Diagnostic Tests in Arithmetic; Cleveland Arithmetic Tests; Willing Scale for Measuring Composition; Nassau County Supplement to Hillegas Scale; Freeman Chart for Diagnosing Handwriting; Rugg's Rating Scale for Judging Teachers in Service and Rating Scale for Judging High School and College Students; The Freeman-Rugg Group Intelligence Test; Hotz First Year Algebra Scale; Van Wagenen American History Scales; Murdock Sewing Scale; Starch's English Grammar Tests, Punctuation Scale, Spelling Test, Geography Test, Geometry Test, Latin Test, Physics Test, Reading Test; Home Economics Grading Cards—Iowa State College; Woody-McCall's Mixed Fundamentals: Hahn-Lackey Geography Scale. Other Tests will be added as they appear. Correspondence is invited.

The Bureau has been making surveys of local schools and plans to coöperate with other schools desiring to survey their school conditions. Inquiry may be made to this bureau as to methods and plans of coöperation in making a school survey.

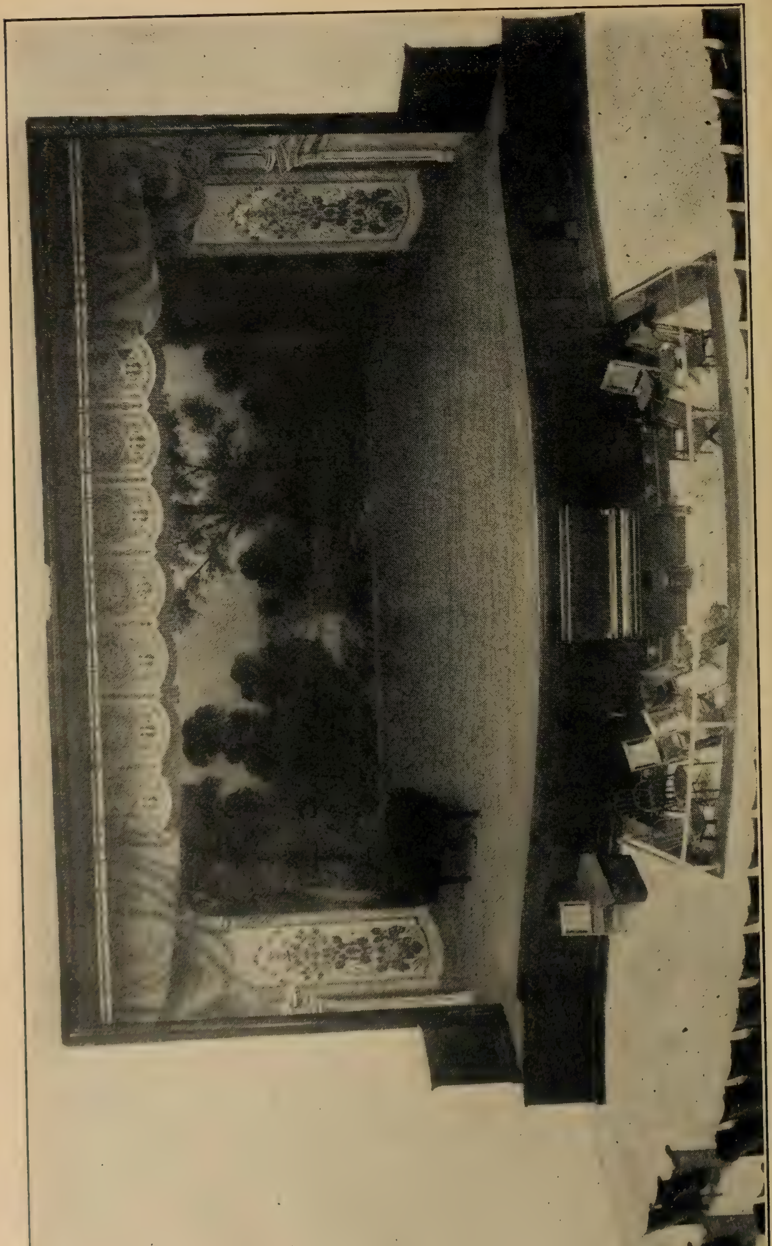
THE ENGINEERING SOCIETY.

The Engineering Society is composed of those students who are taking technical work in this institution with a purpose of becoming practical engineers, and those instructors who are engaged in teaching this type of work. Monthly meetings are held, and the programs include reports on current engineering topics by instructors and students, reports of scientific meetings and associations, lectures by prominent engineers and business men connected with industrial organizations. The membership also comprises many students who are specializing in mathematics and physsical science for the purpose of becoming teachers and who wish to get into close contact with the practical applications of their special subjects. This organization is serving a valuable purpose in linking closely together the practical engineers with those teachers who are teaching work directly related to practical vocations.

VOCATIONAL EDUCATION FOR DISABLED SOLDIERS.

The Federal Board for Vocational Education for rehabilitation of disabled soldiers, in selecting institutions equipped for the kind of work which they desired these men to have, designated this institution for that purpose. We are justly proud of this honor, and especially when the inspecting officer reported to this board that our shops for equipment, light and sanitation were among the very best that he had found anywhere, and in many respects far superior to the average institutions doing similar work. The board, by reason of this fact, has sent to this institution a large number of men to be trained in Electrical and Mining Engineering, Steam and Mechanical Engineering and in various mechanical trades. The many technical courses offered by this institution afford an excellent opportunity for men who desire to prepare themselves for a better job. This should help any young man, wishing to go to school to prepare himself in practically vocational subjects, to decide the question. We have just been recently informed that a very much larger number of men are to be sent to us by the Federal Board for Vocational Education. We accept this charge with pleasure and full confidence that our equipment and instructors will do for these men what the government of the United States desires to have done.

For further information write W. A. BRANDENBURG, *President.*



THE STAGE, CARNEY HALL.

SECTION II.

College of Liberal Arts and Sciences.

The Faculty.

WILLIAM A. BRANDENBURG, Ph. B., President.

G. W. TROUT, A. M., Dean of College and Professor of History and Social Science.

EULALIA E. ROSEBERRY, B. S., Professor of Geography.

JAMES ANDERSON YATES, B. S., M. S., Professor of Chemical and Physical Sciences.

ERMINE OWEN, M. A., Professor of English.

D. M. BOWEN, B. A., Professor of Education and Principal of Training School.

ORIS P. DELLINGER, A. B., Ph. B., Professor of Biology.

J. A. G. SHIRK, M. S., Professor of Mathematics and Applied Mechanics.

MARGARET COVENTRY, A. B., Assistant Professor in Physical Sciences.

WILLIAM EDGAR RINGLE, A. B., Associate Professor of Biology.

HATTIE MOORE-MITCHELL, A. M., Professor of Methodology and Dean for Women.

O. F. GRUBBS, A. B., B. S., Associate Professor of History.

SAMUEL J. PEASE, M. A., Professor of Language.

ERNEST BENNETT, B. S., Assistant Professor of French and Latin.

EDGAR NELSON MENDENHALL, Ph. B., Professor of Rural Education.

ZOE A. THRALLS, B. Ped., Ph. B., Assistant Professor of Geography.

RICHARD ROBERT SIGLER, A. M., Associate Professor of Biology.

C. O. VAN DYKE, M. A., Associate Professor of Mathematics.

GEORGE V. EMERY, A. B., Associate Professor of Physical Sciences.

CLINTON W. WRIGHT, A. B., Assistant Professor of Mathematics.

ANNE CASELEY, A. B., Assistant Professor of History.

W. R. CLEVELAND, B. S., M. S., Associate Professor of Chemistry.

PRESTON E. REED, A. B., Associate Professor of English.

BERTHA A. BENNETT, B. S., Director of Physical Education for Women.

ETHEL MAE HILL, B. S., Assistant Director of Physical Education for Women.

JOHN W. BOWERS, Ph. D., LL. D., Associate Professor in History.

FRANK DEERWESTER, A. B., Pd. M., Pd. D., Associate Professor of Phychology.

HAROLD F. SCHORY, A. B., B. O., M. A., Professor of Public Speaking and Expression.

G. W. WEEDE, B. S., D. D. S., Director of Physical Education for Men.

WILLIAM H. MATTHEWS, Instructor in Physical Science.

College of Liberal Arts and Sciences.

DEGREES.

Students who have attended the State Manual Training Normal School for one year, and having completed at least thirty hours in this institution with a minimum of five hours in the major, and who have completed any of the four-year college courses, including at least eight hours of professional work in addition to that required for the life diploma, chosen from junior and senior subjects, will be admitted to the degree of bachelor of science in education, which degree is a life certificate to teach in any elementary or high schools in the state of Kansas.

At least forty hours must be selected from the junior and senior subjects.

No student may offer for the degree more than twenty hours in any subject in which a major is not offered.

No more than eight hours of commerce will be accepted toward a degree.

One hundred twenty-four credit hours of work are required for graduation from the degree course. Four hours of this work are in the Physical Education Department. A credit hour consists of one class period per week in a subject for one semester, except laboratory, drawing, manual and physical training subjects, in which two class periods per week for a semester constitute a credit hour.

No more than four hours college credit of the one hundred twenty-four will be allowed for practice courses in physical education.

ADMISSION.

1. High-school graduates presenting fifteen or more approved units or credits will be admitted, without examination, to the first year of the Normal College course. (A unit is one year's high-school work, five periods per week, two periods of laboratory or shop work counting as one.)
2. Students of maturity having at least thirteen (13) units of high-school work may be admitted conditionally to certain prescribed courses.

All students should present transcript of all grades made prior to their entrance here. This includes high-school work, work done in other institutions, and teacher's certificates.

EXAMINATIONS FOR ADVANCED STANDING.

Students may, upon good and justifiable grounds, be permitted to take examinations for advanced standing by the permission of the Accrediting Committee and the head of the department in which the examination is to be taken, in such subjects as may be agreed upon, it being understood that no student will be permitted to take such examination as would in any way jeopardize the standing of the institution in its affiliated relations.

Application for advanced standing should be made at the first entrance of the student to the institution. Students who expect to take examinations for advanced standing or submit credits or credentials from other institutions for advanced standing should, if possible, send these credentials and evidences of work completed in other institutions to the Registrar of this institution before the time of enrollment, and thus save themselves a lot of worry and waiting at the beginning of the semester, when they should be classified and enrolled in their class work. These credentials should be sent two or three weeks before the opening of the semester, that the Accrediting Committee may have opportunity to evaluate them and fix the standing of the student. The Accrediting Committee can give no estimate of the advanced standing of prospective students unless these conditions are complied with.

The committee cannot consider applications for examination for advanced standing which are made later than ten days after matriculation, and if the applicant is permitted to take such examinations, these examinations must be taken not later than the middle of the first semester.

No advanced standing credit will be given for work done during a four-year course of study in a high school, academy or preparatory school. No student will be permitted to take examinations for advanced standing or credit who is carrying the maximum amount of work either by extension, correspondence or residence. The maximum advanced-standing credit for work done in a junior college is sixty hours plus physical training. In no case will work done in a junior college be accredited as the work of the senior college.

All inquiries and correspondence concerning advanced standing should be addressed to J. F. Mitchell, Registrar, Pittsburg, Kan.

All advanced standing credit is conditional and may be withdrawn if the subsequent record of the student should warrant it.

No advanced standing credit for collegiate or professional standing will be granted without the recommendation of the Accrediting Committee.

ENROLLMENT.

While it is advisable for students who are entering to enroll at the beginning of a semester, they may, upon sufficient reason, enroll at any time. Credit, however, is not assured to those who enroll later than one week after the opening of a semester.

FEES.

Full information regarding fees and expenses is made on page 31, section I, General Information.

AMOUNT OF WORK THE SEMESTER.

A student of college grade is expected to take not to exceed seventeen credit hours of work the week, for each semester, unless a larger assignment is granted by the Accrediting Committee.

THE CREDIT HOUR.

For each credit hour of any course in the College the student is expected to devote himself for three hours, either in the classroom, laboratory, or outside preparation.

GENERAL COURSE.

For the preparation of high-school teachers majoring in Biology, English, Foreign Languages, History, Mathematics, or Physical Sciences.

Students expecting to receive a Life Certificate at the end of the second year of this course must offer at least 16 hours and not more than 20 hours in his major, 12 hours in a minor, 12 hours Education, 4 hours English, 2 hours Physical Education, and not more than 8 hours in any other department.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Biology	3 or 5	Psychology (2)	3
Chemistry	2 or 5	Major	2, 3, or 5
English	4	Physical Education (2)	1
Foreign Language	3 or 5	Electives	7, 9, or 10
History	2, 3, or 5		16
Mathematics	2, 3, or 5		
Physiography	3 or 5		
Physical Education	1		
	16		

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Elementary Education	3	Modern Education	3
General Methods (4)	2	Major	2, 3, or 5
Major	2, 3, or 5	Electives	7, 9, or 10
Electives	5, 7, or 8		15
	15		

JUNIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Education	5	Major	2, 3, or 5
Major	2, 3, or 5	Electives	10, 12, or 13
Physical Education (6*a*)	1	Physical Education (6*b*)	1
Electives	5, 7, or 8		16
	16		

SENIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Teaching	3	Major	2, 3, or 5
Major	2, 3, or 5	Electives	10, 12, or 13
Electives	7, 9, or 10		15
	15		

REQUIREMENTS FOR DEGREE OF BACHELOR OF SCIENCE IN EDUCATION MAJORING IN PROFESSIONAL GROUP.

I. GENERAL REQUIREMENTS:	*hrs.*	II. PROFESSIONAL, 30 to 40 hours:	*hrs.*
English	6	Psychology	6
Public Speaking	3	Elementary Education	3
Sociology	3	Secondary Education	3
Five (5) hours each in History, Mathematics, Biology and Physical Science	20	Modern Education	3
Physical Education	4	Administration	3
		Teaching	3
		Elections in Ed. to make 30 to 40 hours.	

III. Major selected from any degree group.......... 20 hours.
IV. Electives to meet degree requirements of.......124 hours.

One of the Biological Laboratories in Carney Hall.

Students not offering at least three units of foreign languages from secondary school are urged to offer at least ten hours in some language other than English.

COURSE GROUPS.

Courses of instruction are organized into ten groups, with special emphasis on a different subject called the major subject in each group. A course comprising two years' work is provided for those preparing for grade positions. Thirty semester hours of work in a subject constitute a major in that subject. Students wishing to graduate from the degree course must elect one of the groups not later than the Junior year.

1. INDUSTRIAL ARTS:	*hrs.*
Industrial	30
Professional	20
English	8
History	9
Mathematics	8
Physical Sciences	6
Physical Education	4
Drawing	16
Elective	23

2. HOME ECONOMICS:	
Home Economics	40
Professional	20
Biology	10
Physical Sciences	12
English	7
History	8
Physical Education	4
Drawing	6
Elective	17

3. BIOLOGY:	
Biology	30
Professional	20
English	8
History	8
Mathematics	5
Physical Sciences	10
Physical Education	4
Elective	39

4. HISTORY:	
History	30
Professional	20
Biology	8
English	12
Mathematics	4
Physical Sciences	8
Physical Education	4
Elective	38

5. ENGLISH:	*hrs.*
English	30
Professional	20
Biology	5
History (5) (6) (58)	12
Language	12
Mathematics	3 or 4
Physical Sciences	5
Physical Education	4
Elective	33 or 34

6. MATHEMATICS:	
Mathematics	30
Professional	20
Biology	5
English	4
History	8
Physical Sciences	8
Physical Education	4
Elective	45

7. PHYSICAL SCIENCES:	
Physical Sciences	30
Professional	20
Biology	10
English	4
History	8
Mathematics	8
Physical Education	4
Elective	40

8. FOREIGN LANGUAGE:	
Language*	30 or 35
Education	20
English	12
History	8
Physical Education	4
Two of the following:	
Mathematics	5
Physical Sciences	5
Biology	5
Elective	40 or 35

9. PROFESSIONAL TRAINING:	
Professional Training	30 or 40
History	5
Physical Sciences	5
Biology	5
English	6
Public Speaking	3
Mathematics	5
Teaching	3
Physical Education	4
Elective†	48 or 58

Students not offering at least three units of foreign languages from secondary school are urged to offer at least ten hours in some language other than English.

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* See note under title Foreign Language major, section 2, page 77.

† A major selected from any degree group 20 hours. Chosen from electives.

Biological Sciences.

O. P. Dellinger, Professor.
W. E. Ringle, Associate Professor.
Richard Sigler, Associate Professor.
J. R. Wells, Assistant Professor.
Fines Green, Student Assistant.
Robley Mathews, Student Assistant.
Frank Stoffer, Student Assistant.

There has developed within recent years a demand for better and more universal biological instruction. With the introduction of agriculture and domestic science into our schools, a knowledge of biology is demanded of a much larger number of individuals. For a long time biology was taught for its general cultural value or in its application to medicine; and to-day most of the courses in colleges and universities, and in some normal schools, are organized to meet the needs of the general student or the student of medicine. Teachers of biology have failed to realize that the mass of biological instruction from now on must be largely designed for students in agriculture, domestic science, education, and medicine, and the courses must be so constructed as to meet the special needs of these students.

It is the plan and purpose of the Department of Biology to offer instruction in biology as it applies to these fields; and many of the courses organized are especially for the student of domestic science, agriculture, or education. There are, however, a few courses of a general nature, but they are fundamental to any education.

The department has moved into new quarters, consisting of eleven rooms given over to laboratories, lecture rooms and offices. The laboratories are newly equipped with the most modern of apparatus and appointments. The department has forty new compound microscopes, with fifteen oil immersions, dissecting microscopes, prepared microscopic slides for histology, embryology and bacteriology, also several hundred lantern slides. The incubators, sterilizers and glassware for cultural work in bacteriology are most complete. For the nature-study work we have acquaria and vivaria for living specimens, also a very complete collection of material, made by extension students and donated to the department, illustrating nature-study work in the grades.

The new laboratories have desks equipped with water, gas, electricity and a complete refrigerating outfit. We are equipped to do in a very effective way the laboratory work of public health bacteriology, physiology, histology, nature study, botany and zoölogy. The School has thirty-five acres on which are large ponds, garden plots, agricultural plots and demonstration areas for the use of students, where they become acquainted with a great many of the native plants and animals and natural habitat.

BIOLOGY.

Course 1.—General Biology. This course is an introduction to the other biological sciences, and aims to acquaint the student with the elementary forms and forces of living nature. Here the student gets his first glimpses of the laws of evolution and heredity as they apply to human progress. Much attention is paid to the evolution of conduct of life. Types for study are selected as far as possible from the common animals. Three hours credit. Laboratory fee for material used.

Course 2.—General Biology (continued). In this course the student studies the laws of growth and reproduction of living organisms as they are illustrated in plants. Here emphasis is given to the economic phases of botany. Plants are studied in their relation to medicine, textiles, lumber, ornamentation and food production. Attention is given to propagation and distribution. Three hours credit. Laboratory fee for material used.

Course 3.—INVERTEBRATE ZOÖLOGY. In this course a series of forms representative of all the phyla of the invertebrate are studied. The emphasis is placed on morphology, life history and behavior. Prerequisite, course 1 or its equivalent. Five hours credit. Laboratory fee for material used.

Course 4.—VERTEBRATE ANATOMY. A study of the comparative anatomy of a few representatives of the vertebrate. Dissection of one or two types from each group constitutes the laboratory work. Prerequisite, course 1. Five hours credit. Laboratory fee for material used.

Course 5.—MORPHOLOGY OF THALLOPHYTES AND BRYOPHYTES. A course in which the morphology, classification and genetic relationships of groups of plants representative of the algæ, fungus, moss and liverworts are studied. Some attention is given to collection and preserving of the representatives of these groups in the country about the Normal. Prerequisite, course 2 or its equivalent. Five hours credit. Laboratory fee for material used.

Course 6.—MORPHOLOGY OF PTERIDOPHYTES AND SPERMATOPHYTES. A continuation of course 5, into the higher groups of plants. Special attention will be given to life histories and classifications. Prerequisite, course 2 or its equivalent. Five hours credit. Laboratory fee for material used.

Course 14.—APPLIED BIOLOGY I—NATURE STUDY. This course is designed especially for primary and grade teachers. It attempts to answer the question, What knowledge of living forms is adapted to children between the ages of six and fifteen? A review of the literature in this field is also given. Four hours credit.

Course 15.—APPLIED BIOLOGY II—ELEMENTARY AGRICULTURE. The principles of vegetable gardening, fruit growing, landscape gardening, forestry, and the elements of animal husbandry form the basis of this course. Two hours credit.

Course 19.—ENTOMOLOGY. A course in the classification and collection of life histories of the common insects, also, a study in the methods of control of the common injurious insects in the orchard, garden and field crops. Two hours credit. Summer terms.

Course 53.—GENETICS. The course is especially designed for domestic science students, but is open to all students of college grade. A careful review of the literature on heredity and eugenics is given, together with a study of the law of reproduction. Two hours or four hours credit.

Course 54.—HISTOLOGY. This is a laboratory course in which the student is given an opportunity to make preparations of the animal tissues and to study their microscopical structure. Four weeks is devoted to the chick embryo. Two or four hours credit. Laboratory fee for material used.

Course 55.—EMBRYOLOGY. The development of the germ cells, fertilization, the differentiation of the germ layers, and the growth and development of the systems and organs are studied in this course. The laboratory work consists of mounting and studying a series of sections of chick, pig and turtle embryo. Three hours credit. Fall and summer terms. Laboratory fee for material used.

Course 61.—PLANT PHYSIOLOGY AND PATHOLOGY. This is the study of the principal life functions of plants, such as photosynthesis, respiration, transpiration, growth and reproduction. The diseases of the orchard, farm and garden plants are studied in this course. Students become acquainted with these diseases and the best methods of prevention. Lectures and laboratory work. Three hours credit. Fall term.

Course 62.—SYSTEMATIC ZOÖLOGY. A classification of the different groups of animals of the state. By appointment only. Three hours credit. Prerequisite, course 1 or 2, or equivalent.

Course 64.—HISTORY OF BIOLOGY. A study of the history of biology from the times of the Greeks to the present. The part different people and individuals have played in developing the science is noted. Required of all students majoring in biology, but open to any college student who has twelve or more hours in biology. Four hours credit.

Course 65.—SOCIAL BIOLOGY. In this course the part biology has played in the development of the race is studied, especially the relation of biology to medicine, agriculture and education is emphasized. There are five books to be read and reviewed. Four hours credit.

Course 66.—BIOLOGY AND SECONDARY EDUCATION. With the introduction of courses in agriculture, domestic science and education into the high school, biology takes a new place in this field of education. This course discusses the nature and scope of the work in biology in the high school, and relates it to these allied subjects. Two or four hours credit.

Course 69.—ECONOMIC ENTOMOLOGY. A course similar to course 19, but presupposing a knowledge of the morphology of insects. Students will be required to make collections of the common economic insects together with their life histories. Also, an experimental study of the effectiveness of various agencies of control will be made. This course is largely a laboratory and field course. Two hours credit.

Physiology, Hygiene, and Public Health.

Course 11.—HUMAN PHYSIOLOGY. The purpose of this course is to teach those things that will enable the student to make of his or her body, and also the bodies of those they minister to, the most efficient mechanism possible. The requirements of the body as to food, exercise, sleep, fresh air, bathing, etc. The physiological requirements of children, where they differ from the adult, will be emphasized. The physiology of reproduction will receive the attention it deserves. Daily for twenty weeks. Four hours credit. Laboratory fee for material used.

Course 12.—PHYSIOLOGY AND HYGIENE. This is a course designed especially for grade and rural school-teachers, covering the principles of physiology and hygiene. Special emphasis is laid on ventilation, foods, play, eye and ear hygiene, and those phases of the subject which are of interest to every grade school-teacher. Three hours credit. Fall and summer terms.

Course 16.—GENERAL BACTERIOLOGY. This course is required of all students who major in domestic science or agriculture, and is open to any student in the college course. It is a general introductory course consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit. Fall, spring and summer terms. Laboratory fee for material used.

Course 17.—HYGIENE AND PUBLIC HEALTH. A course in elementary bacteriology designed especially for grade and rural teachers. The course is a general survey of the field of bacteriology as it relates to civic and school sanitation, agriculture and the preservation of foods.

The student becomes familiar with immunology and the physiological factors involved in the natural resistance to disease. Three hours credit. Fall and summer terms.

Course 18.—VOCATIONAL HYGIENE AND SANITATION. A course designed especially for the students in industrial arts. The principles of hygiene and sanitation as related to the industries and the men in industrial work form the basis of this course. One hour credit. Spring and summer terms.

Course 51.—SANITATION AND WATER SUPPLIES. A course covering all the problems of sanitation of the home, sewerage disposal, ventilation, and water supplies. Two hours credit.

Course 56.—HYGIENE AND PUBLIC HEALTH A course designed especially for those interested in the general problems of public health. The course is a general survey of all those factors which incapacitate man for social service. Bacteria, food, water, ventilation and air, mental hygiene, vocational hygiene, and school hygiene are some of the topics discussed. The reading consists of references from a number of books in this field. Four hours credit.

Course 57.—ADVANCED BACTERIOLOGY. This is a course covering the elementary principles of immunology and serology. The student becomes familiar with laboratory procedure and cultural methods of Public Health work. Sufficient number of animals are used to familiarize the student with the processes of building up immune bodies. Three hours credit.

Course 58.—SPECIAL METHODS. This is a course devised to meet the needs of those students who wish to make themselves more familiar with the practical work of the laboratory end of the Public Health Service. It is intended primarily for the student who has finished the courses in Histology, Physiology, and Bacteriology. Stress will be put upon the routine work of such a laboratory, and sufficient repetition will be demanded in order to make the student have confidence in his findings. Gastric contents, pathological urines, spinal fluids, throat cultures, etc., and direct bacterial examination, as well as special methods in milk and water, will constitute the subject matter of the course. Two hours credit.

Course 67.—NEUROLOGY. A study of the gross anatomy, physiology and microscopic structure of the nervous system of the vertebræ. Two hours credit.

Course 68.—NUTRITIONAL PHYSIOLOGY. As the name implies, the course gives special attention to the physiology of nutrition. It covers about the same field as the first half of course 11, but goes much more into detail, and has more extended laboratory work. Three hours credit. Laboratory fee for materials used.

AGRICULTURE.

The work of this subject is conducted by means of textbook study, reference work, lectures, demonstrations, observation of field work, laboratory experiments, practical work in the school gardens and at the experiment stations. The experiment stations consist of about thirty-five acres devoted to various experiments and tests that have special value to the teachers and farmers in this section of the country. Through the affiliation of other departments, practical courses in farm blacksmithing, farm carpentry, gas engines and farm mechanics have been worked out to meet the needs of those specializing in agriculture. The following courses are offered:

Course 1.—RURAL-SCHOOL AGRICULTURE. This course is designed to meet the needs of those who are preparing to teach in the grades and rural schools. Practical experiments and demonstrations will be outlined for each grade. First semester; one hour lecture, four hours laboratory and field. Two hours credit.

Course 2.—GENERAL AGRICULTURE. A course in which a general survey of the whole field of agriculture is taken. This course is planned especially for the students who wish a general introduction to this great industry. While Biology 1, 2 or 12 is desirable as a prerequisite, it is not necessary. Three hours credit.

Course 3.—VEGETABLE GARDENING. Principles and practices used in growing vegetables. Special attention is given to the home garden. The scoring, marketing, and canning of vegetables is given special emphasis. The work has been arranged to meet the needs of those specializing in Domestic Science and Agriculture. Second semester; two hours lecture, two hours laboratory and field. Two hours credit.

Course 4.—AGRONOMY. Lectures and recitations on the history, production, cultivation, harvesting and marketing of farm crops. The laboratory and field work will consist of a study of all crops adapted to this region and judging of different cereals. First semester; two hours lecture, four hours laboratory. Five hours credit.

Course 5.—SOILS AND FERTILIZERS. Soils are studied as to origin, kind and fertility. Much attention is given to the question of how to keep soils productive and how to keep soils to a high state of production. Twenty weeks. Five hours credit. Laboratory fee for material used.

Course 6.—ANIMAL HUSBANDRY. This course includes what is usually given in more extensive courses, much attention being given the subjects of breeds and types of farm animals, stock judging, feeds and feeding, and care and diseases of animals. In it the student becomes acquainted with the things necessary to intelligent management of stock on the farm. Two hours lecture, four hours laboratory. Three hours credit.

Course 7.—FARM MANAGEMENT. Selection of farms; various systems of farming; investment of capital; scoring of farms in the community; farm layout; labor; details, marketing, farm accounting. Five hours credit.

Course 8.—METHODS IN AGRICULTURAL EDUCATION. The origin and development of agricultural education, especially for teachers preparing to teach in rural and secondary schools. In this course the best methods and materials for the teaching of agriculture will receive careful attention. Practice will be given in outlining agricultural courses. Required of all students preparing to teach agriculture. Prerequisite, ten hours in Agriculture. Two hours credit.

Course 9.—AGRICULTURE CLUB. The Agriculture Club meets regularly on Wednesday, at the noon hour. Here the best articles from the leading agriculture magazines and periodicals are reviewed and discussed. A light luncheon is served, and this work is of special value to those preparing to teach agriculture. Open to all agriculture students.

Course 51.—HORTICULTURE AND FARM FORESTRY. This course gives the student a general survey of the field of fruit and truck growing, gardening and forestry. Much of the work will be done in the field. Spring and summer terms. Three hours credit.

Course 52.—POULTRY CULTURE. A general course dealing with poultry houses, yards, etc., fattening and marketing, description of breeds and varieties of poultry. Two hours lecture, four hours laboratory. Three hours credit.

Course 53.—FARM DAIRYING AND BUTTER MAKING. A brief course in the composition of milk and milk products, the use and care of cream separators, the handling of cream, and the manufacture of butter on the farm. Instruction will also be given in the care and feeding of dairy cows and raising dairy calves. Spring and summer terms. Two hours credit. Laboratory fee for material used.

Course 54.—AGRICULTURAL BACTERIOLOGY. Bacteriology as applied to the activities of the farm. Special attention will be given to soil and dairy bacteriology. Required of all agriculture students. Two hours credit. Spring and summer terms.

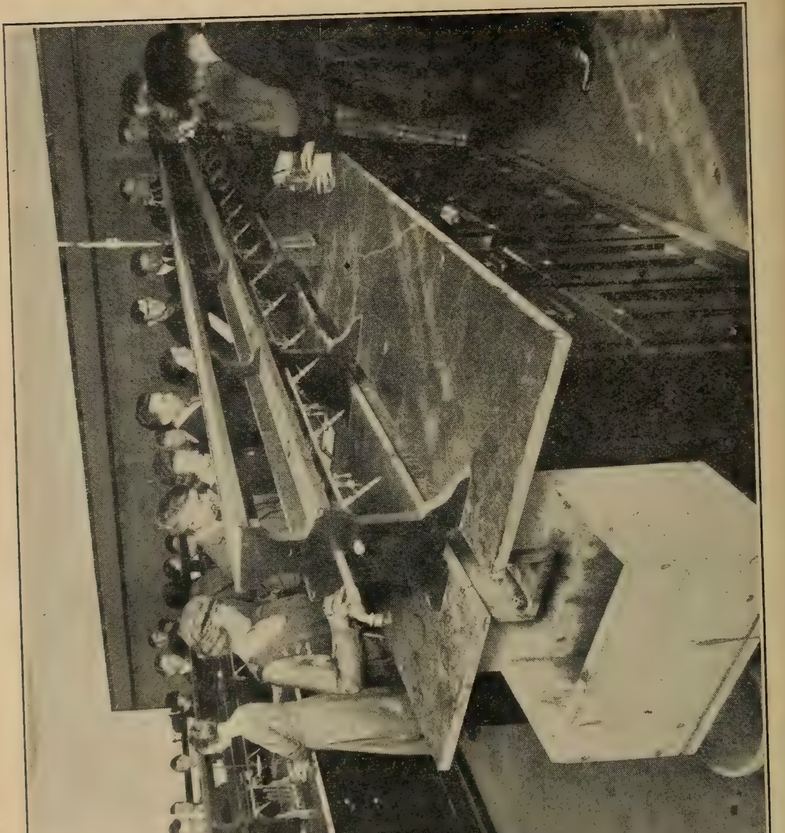
Chemical and Physical Sciences.

JAMES A. YATES, Professor.
GEORGE V. EMERY, Associate Professor.
WILLIAM R. CLEVELAND, Associate Professor.
MARGARET COVENTRY, Assistant Professor.
WILLIAM H. MATTHEWS, Assistant Professor.
EDWARD A. FLOTTMAN, Student Assistant.
LEO HUDIBERG, Student Assistant.
ROBERT M. MENDENHALL, Student Assistant.
LAUNCE L. SUTHERLAND, Student Assistant.
TOBIAS ZIEGLER, Student Assistant.
ALLEN PARK, Assistant Mechanician.

The department stresses the work for the preparation of teachers and in addition gives courses which prepare its graduates for different vocational lines of work. See Industrial Engineering Division of this catalogue, page 151.

No lesson taught educators by the recent war is more apparent than that of the necessity of stressing the importance of science teaching in our schools, and also the great need of chemists and physicists in our manufacturing industries and commercial operations. Probably the most striking lesson of the war, not only to ourselves, but to our allies, was the absolute necessity for work of men trained in the chemical and physical sciences. Our growing commercial and industrial activities are creating a demand as never before for the services of men and women thoroughly trained in the theoretical as well as the practical courses of physics and chemistry, not only for teachers, but for those who desire to go into the various scientific industries of our country.

The increasing demand for teachers trained in the physical sciences, and especially those who are schooled in their application, is shown by the introduction of general science, domestic science and agriculture into the curricula of our grade and secondary schools, as well as chemistry and physics in our high schools. The department has arranged its courses so as to correlate with and furnish the scientific background for the student in home economics or industrial arts, together with academic and other scientific subjects. The department has provided courses for those who expect to teach in the grades as well as for those who expect to do departmental work in the grade schools and high schools of our state. In the description of the courses, which follow, their relation is readily seen; and further, that emphasis is placed upon the application of the principles studied in the different courses.



One of the Chemical Laboratories in Carney Hall.

EQUIPMENT.

The chemical rooms and laboratories occupy the north half of the third floor of Carney Hall. These rooms and laboratories are equipped with apparatus and supplies for the completion of a full college course in different lines of chemical work. There are four laboratories and one lecture room, in addition to a balance room, storeroom and office. The rooms for household physics, general science and geology are located on the east side of the north half of the middle floor of Carney Hall, and include a lecture room, laboratory, geology museum, and office. These rooms are equipped with apparatus and supplies for the proper presentation of these important subjects. The rooms for industrial physics are located in the Industrial Arts building, and are well equipped for industrial and engineering physics.

ADVICE TO STUDENTS AS TO CHOICE OF COURSES.

Those who wish to do the larger part of their work in Chemistry should take courses 1 or 2, 3, 51, 52, 53, and 54. Any additional chemistry courses chosen should be so selected as to fit the student for his future work. A student wishing to do the larger part of his work in Physics should choose courses 31, 32, and 33, with such additional courses as will best fit him for his future work. Students who expect to major in physical sciences with a view to doing graduate work in either physics or chemistry in the University are strongly advised to elect at least ten hours each of French and German and mathematics through the calculus. If the greater part of the student's major is chemistry, at least ten hours of physics from courses 31, 32, and 33 should be chosen; if the greater part of the student's major is physics, at least ten hours of chemistry should be chosen from courses 1 or 2, and 3. Those students who major in this department and who look forward to school supervision work, are advised to take courses 1 or 2, and 3 in chemistry; courses 23, 25, 26, 27, and 33 in physics; and courses 81 and 82 in geology. The remainder of the major may be elected from any of the three lines of work above. For the general electives in the course, the student is strongly advised to choose the courses in such a way that either in his high-school or college course he will have made an acquaintance with the different lines of work he will be called upon to supervise.

CHEMISTRY.

Course 1.—GENERAL CHEMISTRY. This course consists of lectures, recitations and laboratory work upon the fundamental principles of this science, together with the application of chemistry to the various arts and industries. Among the practical subjects considered are chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils, and varnishes, water, air, fuels, and the elementary principles of chemistry in food preparation and other operations in the home. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. This course is not open to students offering elementary chemistry for admission. Laboratory fee for material used. Five hours credit.

Course 2.—INORGANIC CHEMISTRY. This course is built upon a course in elementary chemistry, and consists of lectures and recitations upon the more difficult principles involved in general chemistry, including such subjects as gas laws, the solution of chemical examples, nomenclature, principles of solution, etc. The application of chemistry to the varied needs of man is emphasized. Laboratory fee for material used. Prerequisite, a unit of high-school chemistry or Chemistry 1. Three days lecture and recitation with two hours laboratory work leads to four hours credit; three days lecture and recitation with four hours laboratory work leads to five hours credit.

Course 3.—QUALITATIVE ANALYSIS. This course consists largely of laboratory work. Emphasis is placed upon the analysis and properties of those substances that are used in the industrial arts, as oils, pigments, paints, varnishes, fuels, and alloys. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

Course 10.—FOOD CHEMISTRY. A special course for domestic science students. This course consists in the identification of food adulterants and preservatives, the effect of these upon the body, the analysis and relation of the different classes of foods, and includes a study of organic chemistry related to food. Prerequisite, Chemistry 1. Three hours credit.

Course 15.—GENERAL SCIENCE. This course is planned for grade teachers, and consists of easy demonstrations, which may be performed by the teacher to illustrate some of the scientific principles involved in the study of such subjects as air, water, fire, food, clothing, etc., thereby giving the teacher preparation which will enable her to acquaint the child with its physical environment. Two hours credit.

Course 16.—ELEMENTS OF MINING. This is a general course involving the principles which are employed in prospecting, location and sinking a shaft, cribbing, timbering, lighting, shot firing, underground methods of working both metal and coal mines. Three hours credit.

Course 17.—COAL MINING. This course includes a careful study of ventilation, haulage, and machinery used in coal mining. Three hours credit.

Course 18.—MINE GASES AND VENTILATION. A beginning course in the study of gases found in mines. The properties and tests for these gases will be thoroughly studied. These gases will be prepared in the classroom and various tests for them made. The safety lamp will be thoroughly studied, and its use in testing for the gases found in the mine. The origin and removal of the gases will receive attention. No effort will be spared in teaching the students in this course the practical side of this work. In ventilation the student will be taught how to get the necessary data and how to find the quality of air in a mine, how to keep the quality of the air supply in the mine in proper healthful condition, also how to make the necessary measurements and calculations for the proper ventilation of mines. Two hours credit.

Course 19.—EXPLOSIVES. This course deals with the explosives used in mining, their proper care and attention. The chemistry of explosives is studied in a practical way; also the causes that lead to explosions and how these accidents may be avoided is carefully considered. In all these courses opportunity will be given for questions and discussions in order to find the best way to do the work in hand, and also to avoid accidents. The different methods of mining will receive their share of attention. Two hours credit.

Course 20.—MINING ENGINEERING. This course includes a study of the geological conditions affecting mine operations, making and reading mine maps, a study of the problems that arise in selecting the power to be used in mining, and also the problems involved in transportation and operation of the mine. Two hours credit.

Course 51.—QUANTITATIVE ANALYSIS. This is principally a laboratory course, including both gravimetric and volumetric analysis, supplemented by lectures and recitations. The calibration of glassware and the study of the relation of chemistry to other sciences, along with the various vocations of life, are included in this course. Prerequisite, Chemistry 3. Laboratory fee for material used. Two or three or five hours credit, depending on the amount of work done.

Course 52.—ORGANIC CHEMISTRY. A general course in organic chemistry, including lectures, recitations and laboratory work. This course emphasizes the properties and uses of the organic compounds found in our industrial activities, together with the underlying chemical principles involved. Prerequisite, Chemistry I. Laboratory fee for material used. Five hours credit.

Course 53.—PHYSICAL CHEMISTRY. This course consists of lectures, recitations, readings and laboratory work. The elementary principles of physical chemistry are studied in this course. Emphasis is placed upon a thorough understanding of the laws involved in general chemistry. The basic nature of these principles to the historical development of chemistry is considered. The aim is to lay a solid foundation for future work in the subject. Prerequisite, Chemistry 1, 3 and 4. Five hours credit.

Course 54.—INDUSTRIAL CHEMISTRY. As the name implies, this course consists of a study of various chemical industries and the part the chemist plays in the different lines of manufacture. Both organic and inorganic industries are included in the course. Prerequisites, Chemistry courses 1, 3 and 52 or their equivalent. Five hours credit.

Course 55.—WATER ANALYSIS. A course in the analysis of water for sanitary and boiler purposes. Primarily a laboratory course, but including also lectures and assigned readings on the methods used and the interpretation of results. Laboratory fee for materials used. Two, three, or four hours credit. Prerequisite, quantative analysis.

Course 56.—FUEL ANALYSIS. Both laboratory and class room work on the analysis of coal, coke, fuel gases and oils, including the use of the calorimeter in determining the heat values of fuels. Laboratory fee for materials used. Prerequisite, quantitative analysis. Two hours credit.

Course 57.—LEAD AND ZINC ASSAYING. Volumetric and gravimetric methods for the estimation of lead and zinc in ores. Laboratory fee for materials used. Prerequisite, quantitative analysis. Two hours credit.

Course 58.—TESTING OF OILS. This course includes the usual chemical tests for the examination of the various fuel and lubricating oils used in our industries. The over-point, end-point, and flash and fire-point, together with viscosity and friction coefficients, are studied. Laboratory fee for material used. Two hours credit.

Course 59.—AGRICULTURAL CHEMISTRY. This course is arranged for students of agriculture, and consists of a study of the chemical changes involved in soil fertility and plant growth, the analysis of various plant products and fertilizers, and the study of problems of agriculture of a chemical nature. Laboratory fee for material used. Two or three hours credit.

Course 60.—Textile Chemistry. This course deals with the chemical examination and identification of the different textiles and a brief study of dyeing. Prerequisite, Chemistry 1. Laboratory fee for material used. Two hours credit.

Course 61.—Household Chemistry. This course consists in the application of chemistry in the household, involving sanitation, cleaning and removal of stains. Prerequisite, Chemistry 1. Laboratory fee for material used. Two hours credit.

Course 62.—Physiological Chemistry. This course consists of a study of the chemical changes involved in the cooking, digestion and absorption of foods; the chemistry of the blood and tissues of the body. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Laboratory fee for material used. Two hours credit.

Course 63.—Chemistry of Nutrition. This course consists of a study of the composition of the different classes of food, their function in nutrition, dietaries, and food economy. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Laboratory fee for material used. Two hours credit.

Course 64.—History and Methods in Physical Science. This is a course of lectures given by the different teachers in the department. These lectures consist of a nontechnical discussion of the most important discoveries in the physical sciences. The applications of these principles for efficiency is emphasized. One or two hours credit according to the work done. Prerequisite, 15 hours Physical Science.

Course 67.—Organic Analysis. Recitations and laboratory work in the analysis of food products, medicinal preparations, paints, varnishes, etc. Prerequisites, Courses 51 and 52 or their equivalents. Laboratory fee for materials used. Two or five hours credit, depending on the amount of work done.

PHYSICS.

Course 21.—Plumbing and Pipe-fitting. A study of the fundamental principles of plumbing and pipe-fitting and of modern sanitary appliances for the home. The course includes designs and practice work as well as recitations and lectures. Prerequisite, high-school physics. Two hours credit.

Course 22.—Heating and Ventilation. The principles of operation underlying the various modern systems of heating and ventilation installed in homes and school buildings form the basis of this course. It includes practical problems in the designing of heating and ventilating systems for buildings. Prerequisite, high-school physics. Two hours credit.

Course 23.—Electric Wiring. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Two or four hours credit.

Course 24.—Illumination. A practical course in the designing of illumination distribution for all purposes—home, school, business house, and street lighting. It includes a study of the various types of light sources, shades, and reflectors and their adaptability for various classes of service. Prerequisite, course 23. Two hours credit.

Course 25.—Gas Engines. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics, industrial activities, or in automobiles. Laboratory and lectures. Prerequisite, high-school physics. Three hours credit.

Course 26.—AUTOMOBILE ELECTRICITY. A companion course to course 25. Electrical circuits of the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts. Prerequisite, high-school physics. Two hours credit.

Course 27.—ARMATURE WINDING. A practical course in the testing and repairing of defective and burned-out electrical machinery. Prerequisite, course 33. One or two hours credit.

Course 28.—ELECTRIC SIGNS. A practical course in designing and installing electric signs. Prerequisite, high-school physics. Two hours credit.

Course 29.—ELECTRICAL INSTALLATION. The purpose of this course is the careful study of installation of dynamos and switchboards, together with the connection of the generators with the source of power, and the switchboard with its connection with the transmission wires. This is a very important course, dealing not only with the installation of the larger generators, but also the location and operation of motors of different sizes connected therewith. Two hours credit.

Course 30.—GENERAL PHYSICS. Designed for those who wish a brief course in college physics and who have not had high-school physics. This course is preparatory to other courses in physics and is required of students who have not had a unit of high-school physics or its equivalent. It includes a rapid survey of all the branches of physics, interspersed with demonstrations and laboratory exercises. Five hours credit.

Course 31.—MECHANICS AND HEAT. This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in building, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, high-school physics. Four hours credit.

Course 32.—SOUND AND LIGHT. Lectures and laboratory work in the general theory of sound and light. This course with courses 31 and 33 constitute the equivalent of a one-year course in college physics. Prerequisite, course 31. Two hours credit.

Course 33.—MAGNETISM AND ELECTRICITY. Theories and laws of magnetic and electric phenomena, with their application to modern appliances, operations, and machines. Prerequisite, high-school physics. Four hours credit.

Course 34.—ELECTRICAL MEASUREMENTS. Lectures and laboratory. Includes meter testing; the measurement of temperature coefficient of resistance; specific resistance of copper, iron, aluminum, etc.; the electrolysis measurement of copper; testing of iron for hysteresis and its measurement; the measuring capacity, inductance and earth's magnetic field; telephone line measurements; and wireless equipment measurement. Three hours credit.

Course 35.—DIRECT-CURRENT MACHINE. Lecture and design. The theory of direct-current machine construction. Includes the theory of magnet design, both shunt and series and armature design. Two practical problems are given, one the design of a lifting electro magnet, and the other the design of a direct-current motor. Two hours credit.

Course 36.—ALTERNATING-CURRENT MACHINERY. Lectures, design and laboratory. Advanced alternating-current machinery and alternating-current machine design. Some of the higher problems of alternating-current machinery are taken up in this course, such as alternating-current transmission line calculations and inductive interference in alternating-current transmission lines, transfer men regulations, alternating current generator, voltage regulators, etc.

Course 37.—STORAGE BATTERIES. The construction and operation of storage batteries is carefully studied. The charging of storage batteries receives special attention. The problems of repair are also considered. Storage batteries are being used more and more in electrical work, and the proper use and repair of them is of great importance to electrical workers in the fields where batteries are used. Two hours credit.

Course 70.—THE TEACHING OF PHYSICS. Practice and theory. Texts, materials and methods for basis of study. Prerequisite, high-school physics or course 30. Two hours credit.

Course 71.—HOUSEHOLD PHYSICS. A course for girls interested in home economics. It includes an inquiry into physics as applied to the problems of sewage disposal, lighting, heating, ventilating, cooking, house cleaning, laundering, etc. A careful study is made of modern labor-saving, sanitary and economical appliances for the home. Prerequisite, high-school physics or course 30. Two hours credit.

Course 76.—WIRELESS TELEGRAPHY. The theory and practice of radio-communication. Prerequisite, course 33. Two hours credit.

GEOLOGY.

Course 80.—MINERALOGY. This is a brief course in the study of our common rocks and minerals. Easy physical and chemical tests for identification, together with crystal structure, is studied. The relation of the different types of soil and water as found in our state to that of the geological formations is emphasized. Two hours credit.

Course 81.—PHYSICAL GEOLOGY. This course is planned to acquaint the student with the work of the geologist and to enable him to appreciate the relations of this subject to our industrial life. Emphasis is placed upon the industrial and economic side of geology. Among the subjects considered may be mentioned the distribution and supply of fuels; the geologic processes in soil building; the raw material of many of our manufacturing industries; road building; and the making and reading of geologic maps, together with their economic value. Three hours credit.

Course 82.—HISTORICAL GEOLOGY. This course begins with historical geology, and considers the lessons of history to be read in the different layers of rocks. Two hours credit.

Course 83.—ECONOMIC GEOLOGY. As the name implies, this course deals with the economic resources of the United States from the view-point of geology. The mineral products, as iron and the other common metals, clays, coal, oil and gas, building stones, cement, materials, gypsum, fertilizers, water, and other products, are studied. The distribution of these resources, mode of occurrence, origin, uses, production and conservation are considered in this course. Two or four hours credit.

Commerce.

See Section IX, page 238.

Drawing and Design.

See Section III, page 100.

Education.

D. M. Bowen, Professor.
Edgar Mendenhall, Professor of Rural Education.
Frank Deerwester, Associate Professor.
Oscar W. Alm, Principal Junior Training High School.

A minimum of twelve hours in education is required for a life diploma to teach in the elementary schools and the junior high schools of Kansas. A minimum of twenty hours is required for the B. S. degree in education. A major of thirty hours, exclusive of teaching, may be selected in education, and a minor of twenty hours in any other department in which a major is offered.

Junior College Courses. Course 1, Introduction to Education; Course 2, Modern Education; Course 3, Rural Education; Course 4, Current Educational Problems; Course 5, Industrial Education; Course 6, Social Principles in Education; Course 7, General Psychology; Course 7*b*, General Psychology; Course 8, Child Psychology; Course 9, Principles of Education; Course 10, Stories and Literature; Course 11, Kindergarten Theory; Course 12, Junior High School.

Senior College Courses. Course 51, Administration; Course 52, Educational Measurements; Course 53, Rural Education; Courses 54, 55, 58, Secondary Education; Course 57, Educational Psychology; Course 56, Social Psychology; Course 59, Philosophy of Education; Course 60, School Supervision.

ADMINISTRATION AND SUPERVISION.

Course 1.—Introduction to Education. Required in all life-certificate courses for teachers, except the course for rural teachers. The aim of this course is to acquaint the student with educational facts which should be the common knowledge of every one engaged in education. This course also furnishes necessary groundwork for more advanced subjects in education. Three hours credit.

Course 2.—Modern Education. The purpose of this course is to introduce the student to the best in modern educational ideas and educational practice. As a basis for this course the essential facts of modern educational development will be reviewed. Three hours credit.

Course 3.—Rural Education. This course is primarily for beginning teachers and teachers of limited experience and training. The organization of the rural school, the making of the program, problems of school discipline, school-room decoration and equipment. The rural-school playground will receive due consideration. Three hours credit.

Course 4.—Current Educational Problems. A study of present-day problems in education. The course is based on current educational literature, and involves a discussion of modern ideas concerning the purpose of education, subject matter, motivation, educative processes, measuring results, reorganization of school system and other kindred subjects. A library course, open to sophomores, juniors, seniors and teachers of experience. Four hours credit.

Course 5.—INDUSTRIAL EDUCATION. Designed to familiarize the student with the more professional aspect of the work of the teacher and supervisor of the industrial arts. The work consists of lectures, assigned readings, reports, etc. Among the various topics covered by the work are the following: Early educational history; Pestalozzi, effects of his work; education in Germany, France and England, with reference to industrial education and manual training; work of Victor de la Vos and the Russian system of manual training; Cygnæus, Salamon, and the sloyd movement; the beginning and development of manual training in the United States; aspect of the movement for the promotion of industrial education in the United States and abroad; legislation pertaining to industrial education; work of trade, vocational and technical schools studied and compared; sources of literature bearing on this phase of the public-school work. Second term, three single periods per week for eighteen weeks. Open only to students majoring in Industrial Arts. Three hours credit.

Course 6.—SOCIAL PRINCIPLES IN EDUCATION. A course in educational sociology, dealing with the social laws and principles governing education. A socialization of the school, its administration, course of study, methods, and discipline. A discussion of the school as an instrument for social efficiency. Open to sophomores. Two hours credit.

Course 12.—THE JUNIOR HIGH SCHOOL. Its development, aims and principles; its psychological and sociological foundations; its relation to the elementary and senior high school as an intermediate school. The problem of organizing, administering and supervising the different courses of study; the schedule and teaching force; moral, vocational and educational guidance; student activities, plant and grounds. Three hours credit.

Course 13.—TESTS AND MEASUREMENTS. A brief course for rural and elementary school teachers for the purpose of acquainting them with the standard scales and tests most used. Reading, Arithmetic, Spelling, Geography, Writing and History Scales and Tests will receive special attention. Tabulating and graphing educational data so as to render it more significant to pupils and teachers will also be made a part of this course. Two hours credit.

Course 53.—RURAL EDUCATION. This course will be organized for teachers of experience, principals of village and rural high schools, and supervisors of rural schools. The larger problems of rural education: (1) School and community; (2) hygiene and rural community sanitation; (3) community recreation; (4) the rural church; (5) the rural home; (6) model curricula for rural common schools and rural high schools; (7) school consolidation; (8) the district and county plan of school organization. A basic text will be used, supplemented by reading the reports of state superintendent, school surveys and other appropriate material. Three hours credit.

Course 51.—SCHOOL ADMINISTRATION. A study of the larger problems of administration; the relation of the state to education; the various units of school organization, district, township, county, state and nation; the various administrative officers, their powers and duties; the teaching staff and present tendencies of education administration in America. Offered spring semester. Three hours credit.

Course 52.—EDUCATIONAL MEASUREMENTS. An application of the principles of scientific management to the problems of the school; measuring the child, his physical and mental efficiency; the latest scientific tests for measuring the product of teaching arithmetic, English composition, handwriting, drawing and other school studies. Prerequisite, four hours psychology. Three hours credit.

Course 54.—ADMINISTRATION OF SECONDARY EDUCATION. The purpose of this course is to introduce the student to the vital problems of secondary education; the administration of secondary schools, courses of study, organization and management, social factors, school government and material equipment. Two hours credit.

Course 55.—PRINCIPLES OF SECONDARY EDUCATION. This course is a combination of course 54, Administration of Secondary Education, and course 58, Psychology of High-school Subjects. Three hours credit.

Course 60.—SCHOOL SUPERVISION. This course is intended to meet the requirements of principals, supervisors and superintendents in small cities. It deals with the organization and supervision of the elementary school. Standards for estimating efficiency of teachers, improvement of teachers in service, records, programs and means of unifying the work of teachers in various grades; grading and promotion of children; tests, examinations, etc.; the function of the recitation, study and play periods. The Training School will serve as a laboratory for students in this course. Three hours credit. Open only to students of Junior and Senior College grade.

Course 61.—SCHOOL SURVEYS. Prerequisite, course 52. A study of the Gary, Cleveland, St. Louis, Grand Rapids, Elyria, Ohio, and other leading school surveys will be made a part of this course. When possible practical work will be done by the survey of schools most conveniently located. Three hours credit.

PSYCHOLOGY.

Course 7.—GENERAL PSYCHOLOGY. The purpose of this course is to give the students a working knowledge of the accepted facts and general principles of psychology. In order to give a fair representation of the science as a whole, the descriptive, structural and dynamic phases of psychology are discussed. The point of view is on the whole functional, more attention being paid to what the mind does than to what it is. Discussions, outlines, readings, reports and simple experiments. Offered each semester. Three hours credit. Prerequisite for all other courses.

Course 7*b*.—GENERAL PSYCHOLOGY. This course deals with the applied and dynamic phases of general psychology in its relation to education. An introduction to the field of educational psychology. For college freshmen who have had elementary psychology in high school. Two hours credit.

Course 8.—CHILD PSYCHOLOGY. The aim of the course is to acquaint students with the most important established facts and principles of mental and physical growth of the child. To enable students to recognize types and individual differences among the children; to notice, interpret and deal properly with certain defects; to cultivate an intelligent sympathy with children. Two hours credit.

Course 9.—PRINCIPLES OF EDUCATION. A course in the art of teaching, based principally upon the science of psychology. A discussion of the principles of psychology which are involved in teaching and their application in the work of the classroom, laboratory and shops. The following problems are analyzed and discussed, showing the interdependence of the various aspects of teaching method and the unity involved in mental development; attention and interest; the formation of habits; memory and the principles of memorizing; imagination, its development and use; thinking and reasoning; transfer of training; types of classroom exercises; how to study; individual differences. General psychology a prerequisite. Three hours credit.

Course 56.—SOCIAL PSYCHOLOGY. A study of psychology of the origin and evolution of mental communities; the psychology of suggestion, imitation, fashion, custom, conventionality, sects, fads, crazes, mobs, and public opinion. Two hours credit.

Course 57.—EDUCATIONAL PSYCHOLOGY. This course deals with the application of psychological principles to education. The laws of learning; the amount, rate and limit of improvement; the factors and conditions of improvement; mental discipline; mental fatigue; individual differences and their causes; and original tendencies of man. Discussions, outlines, readings and reports. Course in general psychology prerequisite. Three hours credit.

Course 58.—PSYCHOLOGY OF HIGH-SCHOOL SUBJECTS. A course in applied psychology dealing with subjects in the high schools: mathematics, foreign languages, English, science, history, manual training, household arts. The problems of teaching students to study, and other secondary school problems. Two hours credit.

Course 59.—PHILOSOPHY OF EDUCATION. An interpretation of education as an integral phase of the life process, as a phase of human endeavor. A discussion of certain fundamental problems of education from the viewpoint of philosophy. A study of the aim, content and method of education as determined by the philosophy of education. Open only to juniors and seniors. Two hours credit.

KINDERGARTEN.

Course 10.—KINDERGARTEN THEORY. Taking the child as center of correlation, a study is made of his development, especially of the doctrine of kindergarten procedure as modified in Froebelian literature. The foundations for the work of the course are the student's memories of his own childhood, observation, and experience with children. A study is made of child play, methods of utilizing, etc., leading on the one hand to a study of the gifts, and on the other hand to a study of the occupations. Three hours credit.

Course 11.—STORIES AND LITERATURE. A course designed to supply training for the work of story-telling in the kindergarten and primary grades. Practice and discussion in the art of story-telling are a part of the work. The sources of literature of the development of the myths are studied. Not only should the art of story-telling be developed in this course, but discrimination in the choice of stories for various uses of study; also the origin and meaning of myths, fairy tales and fables, and the classification, adaptation and dramatization of stories. The course is intended for those enrolled in kindergarten and primary, but may be profitably taken by any one desiring to learn the art of story-telling. Two hours credit.

The Training School.

D. M. Bowen, Director.
Elsie Shoshusen, Kindergarten.
Laura Remer, Primary.
Anne den Blyker, Primary.
Bess Hayden, Intermediate.
O. W. Alm, Principal, Junior High School.
Jessie Lesslie, Junior High School.
Supervisors of Special Subjects.

The Training School consists of regularly organized classes from the Kindergarten to the ninth grade, inclusive. In addition many of the Senior High School classes are utilized for training purposes by students in Junior and Senior College classes.

All teacher training is in general charge of the Director of Practice Teaching and records of such teaching are filed in his office.

The school is organized into the following departments: Kindergarten, Primary, Intermediate, Junior High School, and Senior High School.

Kindergarten. This course consists of two hours per day for one semester spent in the Kindergarten in observation, teaching and study of Kindergarten Theory. This course will be continued a second semester by students specializing in Kindergarten work. Four hours credit.

Primary Teaching. The course requires one hour per day for a semester in the Primary Department in observation and teaching. In addition, lesson plans and lesson preparation must be made before coming to class. The student is required to meet the critic teacher or head of department one hour each week for conference. Required of all taking primary teachers' course. Course duplicated the second semester. Three hours credit.

Intermediate Grades. Requirements for this course are as follows: One hour per day for semester in observation and teaching in classroom under direction of critic teacher, one hour per week in conference with critic teacher and other student teachers, and the necessary time in preparing lessons and lesson plans. Three hours credit.

Rural Teaching. This is a combination in which the student will spend half the semester in observation or teaching in the primary grades, and the other half in teaching or observing in the intermediate or grammar grades; also opportunity for observing in standard rural school. The course is intended for those planning to teach in rural or other ungraded schools, and is open to high-school seniors. Three hours credit.

Junior High School. This school is in charge of a principal and two assistants. It consists of the seventh, eighth and ninth grades. Students preparing to teach in Junior High Schools are assigned classes in subjects in which they are majoring under the direction of critic teacher. One hour daily for one semester. Three hours credit.

Senior High School. The Senior High School is in general charge of a principal from the Department of Education and the heads of various departments of the College. Students from the Senior College conducting high-school classes one hour per day for one semester under direction of departments in which such students are majoring receive three hours credit in Practice Teaching.

A minimum of three hours of Practice Teaching is required of all students receiving the Life Certificate. An additional three hours is required of all students completing the degree course. Such teaching to be in the Junior or Senior High School and in the subject in which the student is majoring. In courses requiring more than three hours of Practice Teaching, students who have had at least two years successful experience, may, upon approval of Department of Education, and head of department in which student is majoring, be exempt from more than the minimum amount of teaching.

English Department.

ERMINE OWEN, Professor of English.
PRESTON B. REED, Associate Professor of English.

COLLEGE.

Course 1.—CONSTRUCTIVE ENGLISH. The formal side of English, both written and spoken. A study of the paragraph, of sentence forms, of punctuation, letter writing and formal notes. The entire course correlated with a study of American classics and the late war literature. Four hours credit. Open to freshmen.

Course 2.—THE EPIC. A study of the Lesser Epic: "Sohrab and Rustum," "The Idylls of the King." The Great Epic: "The Iliad," "The Odyssey," "Paradise Lost." Four hours credit. Open to freshmen and sophomores.

Course 3.—SHAKESPEARE. A critical study of the great dramatist as to technique, art, plot, ethics, with some study of the Elizabethan theater, and a close study of several of the greatest plays. Three hours credit. Open to all college classes.

Course 4.—LITERARY CRITICISM. An intensive study of lyric poetry with reference to construction, style, art, spirit, unity, and consistency, with special attention paid to the intellectual, the imaginative and the emotional elements of the classic. Three hours credit. Open to sophomores and juniors.

Course 5.—THE SHORT STORY. Construction work on plot, characterization and visualization, a critical study of some of the short-story masterpieces and others growing out of the great World War. Two hours credit. Open to freshmen and sophomores.

Course 51.—HISTORY OF ENGLISH LITERATURE. The history of English literature from its beginning to the Puritan Age. Emphasis on "Beowulf," the evolution of the English language, Chaucer; an intensive study of Chaucer's "Prologue," and two of "The Canterbury Tales." Four hours credit.

Course 52.—HISTORY OF ENGLISH LITERATURE The history of English literature from the beginning of the Puritan Age to close of the Victorian Era. Milton's shorter poems, the classical school, and the Romantic Revival. Four hours credit.

Course 53.—THE ENGLISH DRAMA. A study of the evolution of the drama from the miracle plays to the closing of the theaters by the Puritan Parliament. A study of Lodge, Green, Marlowe, Shakespeare, Johnson, Beaumont and Fletcher, Ford, Middleton, Webster, Massinger. Three hours credit. Open to juniors and seniors.

Course 54.—EVOLUTION OF THE NOVEL. Richardson, Fielding, Smollet, Sterne, Austen, Bronte, Scott, Dickens, Thackeray, Eliot, Hawthorne, James, Howell. Three hours credit. Open to juniors and seniors.

Course 55.—VICTORIAN POETRY. Appreciation and criticism of Browning, Tennyson, Arnold, Rosetti, Swinburne. Some attention to current poetry. Two hours credit. Open to juniors and seniors.

Course 56.—THE ENGLISH ESSAY. Bacon, Montaigne, Arnold, Lamb, Ruskin, Macaulay, Carlyle, Fitch. Two hours credit. Open to juniors and seniors.

Course 57.—CURRENT PROSE AND POETRY. An intensive study of the masterpieces of prose literature growing out of the World War: President Wilson's first "Lusitania note," his "Flag Day" speech; his speech to Congress asking for a declaration of war on Germany; speeches of Premiers Asquith, Lloyd-George, and Clemenceau; of President Poincaire, Secretary Lane, Gompers, and others. A careful reading of selected poems originating and inspired by the Great War. Two hours credit.

Course 58.—JOURNALISM, NEWSPAPER REPORTING AND CORRESPONDENCE. Theory on the work of the reporter and correspondent. Practice in gathering news and news writing. Each student is required to cover one news assignment each week, besides working a regular "beat." A text and laboratory course. Three hours credit. Open to all college students. Three hours.

Course 59.—JOURNALISM—EDITING. Instruction and practice in editing copy, correcting proof, writing headlines, making up, rewriting, and other editorial details. Open to any student having had course 58. Two hours credit.

Course 60.—THE GREEK DRAMA A study of both the representative masterpieces and the evolution of the Greek Drama—the mightiest original literary achievement of the human intellect. Aeschylus, Sophocles, Euripedes, Aristophanes. Three hours credit.

Course 61.—MODERN DRAMA. A course in the appreciation of the modern drama. A short review of the evolution of the drama will be given for those who have not had course 53. Some of the authors: Ibsen, Maeterlinck, Phillips, Belasco, Zangwill, Kennedy, Tarkington, Wilson, Fitch, Herne, Howard, Miller, Burnett. Three hours credit.

Course 62.—WORD STUDY. Etymology, Semantics, and Synonyms.

Geography.

EULALIA ROSEBERRY, Professor of Geography.
ZOE A. THRALLS, Assistant Professor of Geography.
GLENN LITTON, Student Assistant of Geography.

The department is well fitted with maps, globes and charts for lecture work. The laboratory has a complete equipment of apparatus for physiography, topography, meteorology and mathematical geography. A standard topographic alidade and a number of slope boards have recently been acquired for use in contour work, road and area sketching and map making.

Course 1.—PHYSIOGRAPHY. Designed for college students who desire scientific knowledge of the earth, its relations, physical features, and their origin and development. The work is supplemented by laboratory and field work. Economic controls are given special attention. Courses required in grade teachers' course. Offered each semester. Never in the history of the world has a knowledge of these factors been so desirable as at the present time. Five hours credit.

Course 1*b*.—PHYSIOGRAPHY. The course is designed for college students who have had one year's work in high-school physical geography. The course embraces the scope of work in course 1, in review. Three hours credit.

Course 2.—INDUSTRIAL GEOGRAPHY. This course includes, first a brief study of the geographic basic controls of climate, soil and topography. The course encompasses the origin, history and development of agriculture, textiles, food products, minerals and manufacture of machinery as controlled by geographical factors. This course is especially valuable for the grade teacher, and is particularly designed to correlate with the industrial courses. Three hours credit.

Course 3.—GEOGRAPHY OF AMERICAN HISTORY. This course is designed especially to correlate with American history courses, and consists of a study of geographic conditions which have influenced the course of American history and of their importance as compared with one another, and with nongeographic factors. Special attention will be given geographic factors influencing the recent war. Three hours credit.

Course 4.—PRIMARY GRADE WORK. The teacher in the primary grades must, in order to give the most efficient service, have a knowledge of geographic control far beyond that which is necessary to give the pupil. This course is designed especially to give necessary knowledge to the teachers of nature study and of primary grades, and for those doing departmental work in geography. The work consists largely of the selection and adaptation of material best suited to first four grades and to the method of presentation. Three hours credit.

Course 5.—GRAMMAR GRADE WORK. This course encompasses, first, a study of basic geographic controls, and second, subject matter and methods for the grades above the fourth, and is designed for grade and rural teachers and those doing departmental work in geography. The problem method in geography is given special attention. Two hours credit.

Course 6.—COMMERCIAL GEOGRAPHY. This course is organized to give the student a scientific knowledge of the three distinctive sets of controls—the natural, the human, and the economic. It correlates not only with the other commercial courses, but with the industrial subjects as well. Three hours credit.

Course 7.—GEOGRAPHY REVIEW. This course is for students who desire a thorough review of general geography and for those who teach in the grades, and those who are preparing to do departmental work in geography. Two hours credit.

Course 8.—INDUSTRIAL GEOGRAPHY OF KANSAS. This course is offered to give the students an opportunity to study the industrial development of our own state as controlled by geographic influences. Two hours credit.

Course 9.—MATHEMATICAL GEOGRAPHY. This course is offered in order to give the student an opportunity to make a definite study of the size, form, movement and measurements of the earth, together with its relation to the sun and moon. Two hours credit.

Course 10.—TOPOGRAPHY. This course is designed to give the student an opportunity to study designated areas in detail. Students are given an opportunity to learn use of slope board and topographic alidade, and are given practice in interpreting and making topographic maps. The course is entirely laboratory, conference and field work, and gives one, two, or three hours credit. Amount of credit depending on amount and quality of work done by student.

Course 11.—THE GEOGRAPHY OF NORTH AMERICA. Every teacher should have an accurate and extensive knowledge of the geography of North America. This course will consist not only of an intensive study of the geographic controls of the continent as a whole but also of an intensive study of Canada, United States and Mexico, the geographic factors that have influenced their development, their present commercial and industrial status and their future possibilities. This course will furnish a scientific basis for the study of other continents and also illustrate the best methods of teaching these units to grade pupils.

Course 51.—THE GEOGRAPHY OF SOUTH AMERICA. Present-day conditions have created a demand for information concerning our South American neighbors. The course is designed to answer this demand. Some of the topics considered are: The surface features, climate, resources of South America; the historical background of the republics; the factors upon which rest the commercial and industrial development of the various nations; their present status; the basis and character, present and future, of trade between the United States and South America; what opportunities there are in South America for Americans.

One of the chief difficulties in the way of the best understanding, commercially and politically, between the United States and the South American republics has been our ignorance concerning conditions there. The National City Company of New York and other companies with large interests in South America have found it necessary to establish classes to give their employees sufficient knowledge of the geography of South America to carry on their business intelligently. This course is designed to answer this demand from business as well as to supply the teachers with accurate and interesting information for their work. Four hours credit.

Course 52.—GEOGRAPHY OF EUROPE. Every teacher should have a knowledge of the elements underlying the relationships existing between ourselves and the nations of Europe. Our increased interest in the European nations demands that not only the teacher must have this knowledge but should be able to teach it to the future voters, and statesmen of our nation. This course has been organized for the purpose of putting the teachers in touch with subject matter in such a manner that they may become as familiar with the situations in the countries of Europe as with those of the United States. Our new responsibilities demand that our teachers must give more attention to this problem than they have in the past. Three hours credit.

Course 53.—CURRENT GEOGRAPHY. One, two or three hours. Study of current geography in relation to boundary lines, trade relations and industrial conditions. One hour credit only may be made in one semester. A maximum of three hours credit only may be made in the course.

Course 54.—METEOROLOGY. This course deals with atmospheric conditions as related to weather, climate and life. Three hours credit.

Course 55.—CLIMATOLOGY. This course considers, in addition to climatic causes and effects in general, the climatic regions of the United States and the continents and their relation to physiographic features, climate as a modifying factor of crops, animal life and people of the country. Three hours credit.

History and Social Sciences.

G. W. TROUT, Professor History and Social Science.
O. F. GRUBBS, Associate Professor History.
J. W. BOWERS, Associate Professor History.
ANNE CASELEY, Assistant Professor History.

Course 1.—GREEK HISTORY. A general survey of ancient Greece from the earliest period to its conquest by Rome. Lectures, reports, discussions and library readings. Open to freshmen and sophomores. First semester. Two hours credit.

Course 2.—ROMAN HISTORY. This course takes up Rome at her earliest date and follows her career to the fall of the western empire. Reports, discussions and library readings. Open to freshmen and sophomores. Second semester. Two hours credit.

Course 3.—MEDIEVAL HISTORY. A survey of western Europe from the fall of Rome to the opening of the Renaissance. Open to freshmen and sophomores. First semester. Three hours credit.

Course 4.—MODERN HISTORY. A brief course in the history of Europe from the opening of the Renaissance to the outbreak of the French Revolution. Open to freshmen and sophomores. Second semester. Three hours credit.

Course 5.—ENGLISH HISTORY. A general survey of the whole range of English history down to the present time. Special attention to rise of English government and institutions and their relation to our own. Outlines will be used and special readings assigned, papers prepared and read before class. Five hours credit.

Course 6.—AMERICAN HISTORY I. This is a thorough college course covering the subject of American history for mature students and teachers who may want to strengthen themselves in the teaching of the subject. Four hours credit.

Course 7.—CONSTITUTIONAL HISTORY. A study of the evolution of the American constitution, its interpretation and application to the times. Two hours credit.

Course 19.—OLD TESTAMENT HISTORY. This course is designed to cover the authorship and transmission of the books of the Old Testament to our time, together with the historic background surrounding the authors at the time of the writeup of these books. Offered two hours a week during the first semester. Two hours credit.

Course 20.—NEW TESTAMENT HISTORY This course covers the period of the writing and collecting of the several books of the New Testament, with a study of the authors and purposes of their messages. Offered two hours a week during the second semester. Two hours credit.

Course 21.—CIVIL GOVERNMENT IN THE UNITED STATES. The purpose of this course is to study the structure and functions of the government of the United States, local, state, and national. Such topics will be considered as the constitutional development of American government, the powers and activities of various organs of government and administration, and proposed reforms within the field of American government. Special stress will be laid upon the relation of American state governments to contemporary economic and social problems. Five hours credit.

Course 47.—THE SOCIAL TEACHINGS OF JESUS. This course is designed to furnish an opportunity for the student, in these days of great social changes and scientific study of human society, to discuss what Jesus taught as recorded in the New Testament concerning the special problems of his day, and their present-day application. Offered two hours a week. Two hours credit.

Course 51.—INDUSTRIAL HISTORY. A careful study of our natural resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to the present time. Besides the use of a text the students are required to prepare papers and read them before the class for discussion. Offered three hours per week. Three hours credit.

Course 52.—ECONOMICS. This course deals with the theories and principles of man's activities in the satiation of human wants. It applies these principles and theories to the production and consumption of wealth. It aims to lay well the foundations for advanced work along this line. Special subjects assigned to individual students for investigation and reports to the class. Offered five hours per week. Five hours credit.

Course 53.—POLITICAL SCIENCE—COMPARATIVE GOVERNMENT In this course we study the theories and functions of the modern state as exemplified in the leading nations of the world. Also careful observation of likenesses and differences of these states. Offered three hours per week. Three hours credit.

Course 56.—MODERN EUROPE. Beginning with 1815, governmental change and progress of the countries of Europe up to 1870 are studied. Special emphasis is laid upon the rise of popular governments, the formation of political parties and the limitation of monarchies. Two hours credit.

Course 57.—TEACHING HISTORY Open to all students majoring in history or those who have had at least fifteen hours in history and expect to teach it. Offered two hours per week. Two hours credit.

Course 18.—SOCIOLOGY. An introductory study of the nature, function and development or progress of society. The aim is to familiarize the student with society and some of its problems and cultivate a desire to aid in the solution of these problems. Three hours credit.

Course 59.—APPLIED SOCIOLOGY. In this course we endeavor to apply the principles of sociology to present-day problems. Course 58 is a prerequisite. Offered two hours per week during second semester. Two hours credit.

Course 60.—HISTORY OF THE REFORMATION. This course is preceded by a brief survey of the rise of the Christian church, its institutions and doctrinal development. Special emphasis is laid upon the causes leading to and the great agents employed in the Reformation. Three hours credit.

Course 45.—PARLIAMENTARY LAW AND PRACTICAL LEGISLATION. This course is to develop the ability of the student to preside over deliberative bodies creditably; also to inform him as to the actual practical methods employed in our legislative assemblies. It will consist of special drills and textbook work. Offered two hours per week. Two hours credit.

Course 62.—BIBLE STUDY. This is a course of one hour recitation per week in a careful study of the English Bible. Offered each semester. One hour credit.

Course 63.—AMERICAN HISTORY II. This course covers the period from 1750 to 1829. It is a study of those forces and events which helped to create a national ideal and a national spirit. It deals with those contributions and political problems from within and from without which tended to weld our people into one sovereign state. Two hours credit.

Course 64.—AMERICAN HISTORY III. This course is a study of the difficulties and dangers threatening the life of a nation, together with the forces that contributed to our marvelous progress. It covers the period from 1829 to date. Two hours credit.

Course 65.—CURRENT HISTORY. A thorough study of current events in which we use the best periodicals and magazines for material. One hour a week. Open to all college students. One hour credit. Courses 62 and 65 are open to all classes.

COURSE 67.—LATIN AMERICA. A brief study of the history and traditions of our neighbors to the South—Mexico, Central and South America—with emphasis upon their social, racial and economic development, and their relation to Europe and to the United States. Two hours credit.

Course 49.—RURAL SOCIOLOGY. A study of rural life in its relation to its social centers, with special reference to the rural church, school and other social centers. Offered two hours per week. Two hours credit.

Course 69.—FINANCIAL HISTORY OF UNITED STATES. A brief review of the methods of raising revenue in the United States, the nature of the circulating medium, and the relations of our banking systems to our national life, past and present. This course coördinates with course 51. Two hours credit.

Course 70.—EUROPE FROM 1870 TO DATE This course is to take up the political problems of Europe since the formation of the German empire and study these in reference to the Great War. Two hours credit.

Course 80.—CHRISTIAN EVIDENCES. This course is a rational study of the evidences bearing upon the facts of Christianity as a life and saving factor in human society. Two hours a week. Two hours credit.

Course 85.—ETHICS. This course is designed to help the teacher in placing before his pupils such rational standards of moral conduct as will be easily understood and readily accepted as the proper mode of conduct. It is not a technical course, but is made more practical and designed to be most helpful to the teacher in helping him to produce the right sort of standards of conduct. Offered two hours a week. Two hours credit.

Course 58.—SOCIOLOGY. An introduction to the study of the nature, function and development of progress of society. The same as course 18, but more extended, reciting four times a week. This course is designed for those who have never had any work in Sociology and is a prerequisite to all other courses except course 18. Those having course 18 are not eligible for this course. Four hours credit.

Course 54.—CITIZENSHIP. This course is designed to give the general survey of the relation of the citizen to the municipal, local, state, and Federal government, emphasizing the general organization of the various plans of the above-mentioned government, and the particular function of the citizen in each of these relations. Three hours credit.

Home Economics.

See Section V, page 142.

Industrial Arts.

See Section IV, page 117.

Languages.

SAMUEL J. PEASE, Professor.
ERNEST BENNETT, Assistant Professor.

IMPORTANCE.

In a very real sense, he who knows only his own country knows no country; he who knows only his own language knows no language; he who knows only one age knows no age. In addition to the gain in perspective, the study of foreign languages, especially in a normal college, should result in readiness in understanding the printed page, and elegance, accuracy, judgment and clearness of expression, as well as a conversational use of modern languages.

An increasing number of Americans are coming into close contact with the French people, the French language, and French ideals through the activities of reconstruction, the interchange of students and teachers, the wider range of diplomacy, commerce, and the public-service professions.

The rapid growth of opportunity in every line in Spanish America demands more and more the study of the language, culture and modes of thought of its peoples.

Latin is *par excellence* the teacher's language, since from or through it have come mainly the foundations of modern thought, language, and institutions. Teachers in the field often find themselves under a heavy handicap in their teaching, especially of language work and English in the upper grades and high school, because of a lack of early preparation in Latin. The wider their experience the more they are aware of the undue size of their "blind spot."

CALLS FOR TEACHERS.

The department is unable to supply one-fourth of the demand for teachers. The smaller high schools will readily vary their program to suit a teacher of foreign languages, although the most frequent combinations are the foreign languages themselves or a foreign language with English, history or mathematics. Many junior high schools are introducing courses in Latin or Latin-English.

CHOICE OF COURSES.

PREPARATION FOR GRADUATE WORK.

Students intending to do graduate work in any branch in a university will do well to familiarize themselves with the requirements of the institution in which they intend to work. The usual requirement in foreign languages is from two to four years' work, no credit being given for language work which must be made up. A reading knowledge of French and German is universally required as a prerequisite to the work for the degree of doctor of philosophy.

FOREIGN LANGUAGE MAJOR.

Students wishing to major in Foreign Languages for the bachelor's degree may select thirty hours in a single language (French), but ordinarily will select two languages for their main work. At least twenty hours should be selected from one language. The student must be careful to select a sufficient number of courses numbered 51 or higher. Courses 1, 2, and 10 in Latin, course 1 in French, German, or Spanish will not count as part of the major for the degree nor be included in the ten hours of the major group for junior high-school teachers, page 56, but may count toward a major for the life certificate in the general course. Those who wish to teach foreign languages in the junior high school will find it advantageous to receive their life certificate in the general course.

FREE ELECTIVE COURSES.

Courses 10 and 11 in Latin and courses 7 and 8 in French and Spanish are open to all students in the college, with no prerequisite; language courses 71 and 72 are open to all juniors and seniors without prerequisite.

CORRELATION WITH ENGLISH.

The following courses are especially recommended to students desiring to teach English or Latin-English in junior and senior high schools or the upper grades:

Mythology (English course —).
Word-study (English course 62).
Latin-English grammar (Latin course 10).
Latin in English (Latin 11).
Comparative Etymology (Language 71) for juniors and seniors.
Language Development (Language 72) for administrators and seniors.

LIBRARY.

The Normal library contains about 500 excellently chosen volumes relating directly to the work of the department, largely recent works in French and Spanish. The library also subscribes to *L'Illustration*, the *Boletín de la Unión Panamericana*, *Classical Journal* and *Classical Philology*. The Pittsburg Public Library contains about 100 volumes in French, German, and Italian, and a number of miscellaneous foreign magazines.

FRENCH.

Course 1.—ELEMENTARY. Fraser and Squair's French Grammar, Part I, and Reader, and about 100 additional pages of easy reading. Emphasis on verbs and pronouns. Phonetics after the LeDaum method. Composition. Conversation daily. Five hours credit.

Course 2.—INTERMEDIATE. Fraser and Squair, continued. Modern narrative prose and one easy play. Written exercises, conversation, dictation; introduction to French life. Five hours credit (or three on consultation with the instructor).

Course 3.—MODERN PROSE AND POETRY. Reading, conversation, free composition. Three hours credit. Readings are changed from semester to semester, so that the course may be repeated with profit.

Course 4.—READINGS IN FRENCH HISTORY AND BIOGRAPHY. Conducted mainly in French. Three hours credit. Prerequisite, eight hours of French.

Course 5.—MODERN DRAMA. Prerequisite, course 2. Three hours credit. May be repeated like course 3.

Course 6.—CLASSICAL DRAMA. Introduction to Corneille, Molière, Racine. Conducted in French. Prerequisite, course 2. Three hours credit.

Course 7.—FRENCH LITERATURE BEFORE HUGO. Open lectures on the more important topics of French literature from its beginning to the close of the Revolutionary period. One hour credit.

Course 8.—FRENCH LITERATURE SINCE HUGO. One hour credit.

Course 9.—SCIENTIFIC FRENCH. Daniels' Reader, magazines, monographs. Translations and summaries. Two hours credit.

Course 11.—INTERMEDIATE COMPOSITION. Prerequisite, course 2. Two hours credit.

Course 12.—CONVERSATION AND COMPOSITION. Conversation (Pattou) and free reproduction of stories. Two hours credit.

Course 51.—ELEMENTARY COURSE FOR JUNIORS AND SENIORS. More rapid than course 1, assuming a knowledge of some other foreign language. Five hours credit.

Course 52.—CONTEMPORARY FRENCH LITERATURE. Four hours credit.

Course 53.—HUGO. A careful study of his life and various fields of activity in literature. Four hours credit.

Course 54.—MOLIERE. Reading of all his most important works and careful study of his life and times. Four hours credit.

Course 61.—METHODS. Two hours.

Course 63.—ADVANCED GRAMMAR AND COMPOSITION. Two hours.

GERMAN.

Course 1.—ELEMENTARY. Bagster-Collins. First Book in German, lessons I to XXV; Bacon's Vorwaerts. Conducted mainly in German, but with frequent translation into English. Emphasis on forms and agreement. Five hours credit.

Course 2.—INTERMEDIATE. Bagster-Collins completed. Reading of one simple play and about 200 pages of simple prose and poetry. Memorizing of songs and poems. Free reproduction of anecdotes, poems, and stories. Five (or three) hours credit.

Course 3.—MODERN READINGS. Prose and poetry. Conducted mainly in German. Extensive reading of such authors as Strom, Keller, Grillparzer, Raabe, Heyse. Three hours credit.

Course 4.—CLASSICS. Schiller's Wilhelm Tell, Goethe's Hermann und Dorothea, Lessing's Minna von Barnhelm. Prerequisite, courses 1 and 2, or equivalent. Three hours credit.

Course 9.—SCIENTIFIC GERMAN. Reader, monographs, magazines. Translations and reports in English. Open to those who have had three semesters of college German; to others by special permission of the department. Two hours credit.

Course 12.—ELEMENTARY COMPOSITION. Composition (Allen), conversation (Pattou). Completion of this course should enable the student to converse on most topics of everyday life. Should follow or be taken with course 2. Two hours credit.

Course 51.—SCHILLER. Jungfrau von Orleans, Maria Stuart, poems. Prerequisite, four semesters of college German. Four hours credit.

Course 52.—GOETHE. A study of Goethe's life, experience, and philosophy. Reading of part I of Faust, with a study of part II and the Faust literature. Prerequisite, four semesters of college German. Four hours credit.

LATIN.

Course 10.—LATIN-ENGLISH GRAMMAR. A comparison of the grammar of Latin and English. Forms and simpler constructions. Derivation. Latin selections for memorizing. May be taken by students wishing to review the elements of Latin from the comparative standpoint. Three hours credit. No prerequisite.

Course 11.—LATIN IN ENGLISH. A brief study of the influence of Latin on modern languages, especially English, from the standpoint of vocabulary, orthography, grammar, rhetoric, literature, law. Lectures, exercises, and assigned readings. Two hours credit.

Latin 1.—ELEMENTARY. Covers the same ground as courses 1 and 2 in high school. Five hours. May be divided, with additional reading, into two three-hour courses.

Course 2.—CÆSAR. Covers the same ground as courses 3 and 4 in high school. Five hours credit, or with additional work, six.

Course 3.—CICERO'S ORATIONS. Intensive study of Catiline I and IV, Manilian Law, Archias. Rapid reading in other orations. Composition, rhetoric, Roman public life. Five hours credit.

Course 4.—VERGIL'S ÆNEID. Four books, with rapid reading of others. Mythology, scansion, memorizing of about 100 lines. Five hours credit.

Course 5.—LIVY. Selections from Books I, XXI, and XXII. Follows Cicero or Vergil. Three hours credit.

Course 6.—CICERO'S PHILOSOPHY AND LETTERS. De Amicitia, De Senectute, selected letters, advanced composition. Study of Cicero, the man. Roman private life. Prerequisite, 8 hours beyond course 2. Three hours credit.

Course 7.—HORACE. Odes and Epodes, selected. Two hours credit.

Course 58.—HORACE. Satires and Epistles. Two hours credit.

Course 51.—SUPPLEMENTARY LATIN AND COMPOSITION. A study of the Latin used as supplementary reading and of high-school composition. Prerequisite, courses 5 and 6. Two hours credit.

Course 61.—TEACHERS' COURSE. Objects, arguments, ways and means, knotty points, texts, illustrations, equipment. Prerequisite, eight hours beyond course 2. Two hours credit.

Course 62.—PRACTICE TEACHING IN LATIN. Open to seniors who have had 10 hours beyond course 4. Three hours credit.

Language course 71.—ADVANCED ETYMOLOGY. A consideration of the Latin, Greek and Anglo-Saxon elements of English vocabulary from the standpoint of comparative philology. Influence of Latin and Greek word formation and orthography on English. Effect of Latin grammar on English grammar and vocabulary. Three hours. Open to all juniors and seniors.

Language course 72.—THE LANGUAGE FUNCTION. Development of the language function in the individual. Capacities and adaptabilities of children and adults at varying ages. The factors of linguistic development. Relation to the other functions of the mind. Results of different types of curricula. Place of the ancient and modern languages and literatures in the development of the language function and in the modern school. Three hours. Should be preceded by Child Study and Educational Measurements. Especially for superintendents, principals, and teachers majoring in Education, English or Foreign Languages.

SPANISH.

Course 1.—ELEMENTARY. Hills and Ford's First Spanish Course, Bergé-Soler and Hatheway's Spanish-American Reader. Forms and syntax; practice in speaking and writing. Five hours credit.

Course 2.—INTERMEDIATE. Hills and Ford, completed. Extensive reading and conversation. Idioms and subjunctives emphasized. Five (or three) hours credit.

Course 3.—MODERN NOVEL. Extensive reading of a more advanced type. Conversation and narrative. Conducted in Spanish. Three hours credit.

Course 4.—MODERN DRAMA. Rapid reading of nineteenth century dramas. Conducted in Spanish. Three hours credit.

Course 5.—SPANISH-AMERICAN LITERATURE. Three hours credit.

Course 7.—OUTLINE OF SPANISH LITERATURE. Text: Fitzmaurice-Kelly's Spanish Literature. Lectures alone, open to all, one hour credit; with readings in English or Spanish. Three hours credit.

Course 8.—OUTLINE OF LATIN-AMERICAN LITERATURE. Text: Coester's Literary History of Spanish America. Lectures alone, open to all, one hour credit; with readings in English of Spanish. Three hours credit.

Course 9.—COMMERCIAL SPANISH. Reading, correspondence, conversation. Three hours credit.

Course 51.—JUNIOR AND SENIOR BEGINNING COURSE. More rapid than 1. Five hours credit.

Course 53.—THE NOVEL. Study of its development. Four hours credit.

Course 54.—THE DRAMA. Comparison of the drama of the Golden Age with that of the modern period. Four hours credit.

Latin.

SENIOR HIGH SCHOOL.

Course 1.—ELEMENTARY. D'Ooge: Latin for Beginners, lessons 1 to 35, inclusive. Special attention to forms; daily Latin and English exercises; vocabulary drill; observation of English derivatives. One-half unit credit.

Course 2.—ELEMENTARY (continued). D'Ooge completed. Daily drill on forms, vocabulary, idioms, derivations. Influence of Latin on English grammar and spelling. One-half unit credit.

Course 3.—CÆSAR. Cæsar: De Bello Gallico, book 1 and selections for sight-reading. Baker and Inglis: Latin Prose Composition. Special attention to phrasing, idioms, and fluency of translation. Roman warfare and the Great War. One-half unit credit.

Course 4.—CÆSAR (continued). De Bello Gallico, books 2, 3, 4. Baker and Inglis: Latin Prose Composition. Ancient Germany and Britain. One-half unit credit.

Course 5.—CICERO I. Cicero's first, second and third orations against Catiline. Baker and Inglis' Composition, part II, begun. One-half unit credit.

Course 6.—CICERO II. Fourth oration against Catiline, Archias, Manilian Law. Roman political institutions. Baker and Inglis' Composition, part II, completed. One-half unit credit.

JUNIOR HIGH SCHOOL.

VOCATIONAL LATIN.—*Second Year.* First semester: Nouns, adjectives, prepositions, prefixes, suffixes, cases. Derivative notebooks and scrapbooks. D'Ooge's Latin for Beginners will be used for material. Second semester: verbs, pronouns. History of the Latin and Greek elements in English. Preparation of a Babin exhibit. Especially recommended for pupils planning a course in commerce, science, literature, or the learned professions.

ELEMENTARY —*Third Year.* French I, first semester; French II, second semester.

French.

JUNIOR HIGH SCHOOL.

CONVERSATIONAL FRENCH.—*Second Year.* First semester: Conversation on the everyday surroundings of the pupils; songs, games, memorizing of selections in prose and verse. Second semester: Conversation continued, with easy readings. Fables, poems, songs, short stories.

ELEMENTARY.—*Third Year.* French I, first semester; French II, second semester.

SENIOR HIGH SCHOOL.

Course 1.—ELEMENTARY. First semester. Fraser and Squair's Shorter French Course, Lessons I to XXVI. Snow and Lebon's Easy French. Careful study of pronunciation. Conversation and dictation, with translation into English of difficult phrases only. One-half unit credit.

Course 2. Second semester. Shorter French Course, Lessons XXVII to LII. Easy French completed. Memorizing of songs and poems. One-half unit credit.

Course 3.—INTERMEDIATE. First semester. Shorter French course, Lessons LIII to LXXX. Review of elements. Dictation, memorizing, much oral and written work. Reading of about 100 pages selected from Bruno, Verne, Daudet, Mérimée. One-half unit credit.

Course 4. Second semester. Shorter French Course, completed. Composition, François or Levi. Reading, some intensive, some rapid—about 150 pages from LeSage, Sandeau, Labiche, and others. One-half unit credit.

Course 5.—First semester. Advanced composition and letter writing. Reading of about 200 pages from more difficult authors. Dictation, memorizing, résumés. One-half unit credit.

Course 6. Second semester. Readings from Loti, Coppée, George Sand, Chateaubriand, etc. Methods of course 5 continued. One-half unit credit.

Mathematics and Applied Mechanics.

J. A. G. SHIRK, Professor.
C. O. VAN DYKE, Associate Professor.
C. W. WRIGHT, Assistant Professor.
JACK DOTY, Laboratory Assistant in Applied Mechanics.

SCOPE OF WORK. The department offers the usual courses in collegiate mathematics, and also many courses of an industrial and vocational nature. Some of these latter courses do not require an extended mathematical training as a prerequisite, and are intended to aid young men in shop problems and young women in the various vocations which they usually enter. Many of these technical courses demand considerable mathematical knowledge before they can be studied to an advantage, and consequently those courses which furnish the foundation for them are required as prerequisites. Each course has a statement of the purpose of the course and the other subjects required before entering it.

EQUIPMENT.

MATHEMATICS. The department has a good collection of models in wood and string, illustrating the various geometrical figures. The surveying equipment includes two engineer's mountain and mining transit theodolites, one engineer's wye level, one architect's and builder's level, one farm level, levelling rods, range poles, tapes, planimeters, protractors, and other minor instruments and accessories. The other industrial courses in mathematics are rapidly being provided with drawings of machine parts, models of machines, and in many cases the actual machines, for illustrating the computation involved. For the study of calipers and the slide rule, large models are provided which are easily seen by the entire class.

ASTRONOMY. Students of Astronomy have the use of a twelve-inch reflecting telescope of excellent optical properties. During the spring and summer terms the entire student body have an opportunity of viewing the moon and other celestial objects by means of this instrument.

TESTING OF MATERIALS. A forty thousand pound Reihle Universal Testing Machine is available for the study of the strength of wood, metals, concrete, and other materials in tension, compression, and shear. Beams and columns not exceeding three and a half feet in length may be tested for the safe loads they will carry. Reënforced concrete is given particular attention on account of its universal use.

STEAM LABORATORY The steam laboratory is equipped with several steam engines of various types for the study of governors, valve setting, steam consumption, indicated horse power, and break horse power. The auxiliary equipment comprises a dead weight gauge tester, steam engine indicator, condensers, a transmission, dynamometer, prony, brakes, pressure and vacuum gauges, injectors, boiler feed pumps, and other minor accessories.

HYDRAULIC LABORATORY. The hydraulic laboratory is equipped with a testing tank for three-inch centrifugal pumps, and the necessary gauges, dynamometers, and other instruments used for testing pumps and water motors.

LIBRARY.

The library is well supplied with excellent books on Mathematics, Astronomy, Machinery, Surveying, Water Supply, Sewage Disposal, besides a well-selected list of good magazines on these subjects.

ADVICE AS TO CHOICE OF COURSES.

(*a*) Those wishing to qualify as teachers of mathematics in Junior High Schools by the end of the sophomore year are advised to take courses 1 to 7 and course 10.

(*b*) Candidates for the degree with Mathematics as a Major are advised to take courses 1 to 7, 10, 51, 52, and elect from the other courses offered such as may be desired.

(*c*) Students majoring in Physical Science who expect to take advanced courses in Physics and Chemistry are advised to take courses 1 to 7, 13, and 51.

FOREIGN LANGUAGE.

Those students who wish to specialize with a view to a career in teaching and research in mathematics should acquire a reading knowledge of French and German during their undergraduate course.

Course 1.—PLANE GEOMETRY. The general properties of plane rectilinear figures; the circle and the measurements of angles; regular polygons; solution of numerous original exercises and practical problems. Open only to students not offering geometry for entrance. Three hours credit.

Course 2.—SOLID GEOMETRY. Elements of solid geometry; properties and measurements of surfaces and solids. Open to all students not offering solid geometry for entrance. Two hours credit.

Course 3.—ADVANCED ALGEBRA. This course is open only to those students who have not taken algebra III in their high-school course. It includes a review of linear and quadratic equations, radicals, involution, evolution, progressions, logarithms, and imaginaries. Two hours credit.

Course 4.—COLLEGE ALGEBRA. Rapid review of elementary algebra; graphic representation; complex numbers; series, logarithms; theory of equations; Horner's method. Three hours credit. Prerequisite, one and one-half units of high-school algebra, and one unit of geometry.

Course 5.—PLANE TRIGONOMETRY. The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two hours credit. Prerequisites, same as College Algebra, or course 8.

Course 6.—ANALYTICAL GEOMETRY. The straight line; circle; elements of parabola, ellipse and hyperbola; polar coördinates; higher plane curves; elements of solid analytical geometry. Five hours credit. Prerequisite, courses 4 and 5.

Course 7.—CALCULUS Differential calculus; fundamental principles; derivatives; rates; applications to mechanics; maxima and minima; indeterminates. Integral calculus: integration; definite integrals; applications to lengths, areas and volumes; moment of inertia; fluid pressure. The student is taught the use of tables of integrals in performing integrations. Five hours credit. Prerequisite, course 6.

Course 8.—INDUSTRIAL MATHEMATICS. This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks; mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; house building; power transmission; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit. Prerequisite, two units of high-school mathematics, one unit of physics, or an equivalent experience in mechanic arts.

Course 9.—VOCATIONAL MATHEMATICS. This course is designed especially for women and contains samples of problems from all occupations that women are likely to enter, from the textile mill to the home. Food computations; house construction; house furnishing; dressmaking and millinery; arithmetic for office assistants, sales girls, cashiers and nurses; and a thorough drill in the metric and English systems of weights and measures. Three hours credit.

Course 10.—TEACHING OF ELEMENTARY MATHEMATICS. Essential features of courses in arithmetic as far as the eighth grade. Principles and methods of teaching arithmetic and the allied mathematics of the elementary schools. The course will be presented with outlines with reference to historical material and the proper balance of abstract and concrete work. The aim is to study those topics likely to be introduced into the curricula of the first eight grades and to show how to relate arithmetic to the child's everyday life and his future needs. Three hours credit.

Course 11.—MATHEMATICAL THEORY OF INVESTMENT. A course for the students of business and public affairs. Interest, annuities, amortization, sinking funds and depreciation, building and loan, and life insurance. Two hours credit. Prerequisite, College Algebra, or Advanced Algebra.

Course 12.—DESCRIPTIVE GEOMETRY. Solution of problems relating to geometrical magnitudes in space and their representations by drawings. Execution of a large number of original exercises. Two class periods and two drafting periods per week. Three hours credit. Prerequisites, plane and solid geometry.

Course 13.—DESCRIPTIVE ASTRONOMY. A general course in descriptive astronomy, dealing with the solar system and theories regarding its evolution; nebulæ; comets; meteors; measurements of the earth; determination of standard time. Two hours credit. Prerequisite, high-school algebra, geometry and physics.

Course 14.—FUNDAMENTAL CONCEPTS OF MATHEMATICS. A study of definitions and properties of the different kinds of numbers; irrationals and limits; transcendental numbers; complex numbers; fundamental concepts of geometry with a brief discussion of noneuclidian geometries; logic of mathematics. Two hours credit. Prerequisite, College Algebra.

Course 15.—ELEMENTARY SURVEYING. A brief course in the use of surveyors' instruments; laying out of walks, drives, ditches, and buildings; calculation of cuts and fills; elements of land surveying. Prerequisite, Plane Trigonometry. Two or three hours credit.

Course 16.—MINE SURVEYING. Instruments and methods used for underground traverse and connection surveys; shaft plumbing and special problems. Field work includes the survey of tunnels under campus and actual mine surveys. Prerequisite, Elementary Surveying. Two hours credit.

Course 17.—TOPOGRAPHICAL SURVEYING. Practice in taking topography by transit and stadia, triangulation, measurement of base lines. A topographical survey of an area is made and the resulting contour map constructed from the data obtained. Prerequisite, Elementary Surveying. Two hours credit.

Course 18.—RAILROAD SURVEYING. A study of the methods used in laying out and constructing railways, with field practice sufficient to familiarize the student with these operations; calculation of waterways; laying out of bridges, turnouts, and easement curves. Prerequisite, Elementary Surveying. Two hours credit.

Course 19.—STRENGTH OF MATERIALS. A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shafting and reinforced concrete, resilience of materials. Two hours credit. Prerequisite, course 5 or 8.

Course 20.—MECHANISM. A study of the motion of machine parts and of methods of transmission of motion by means of links, belts, gears, and cams. This work is related closely to the machine motions used in the steam engine and various shop machines. Two hours credit.

Course 21.—MACHINE DESIGN. Solution of problems in the design of general machine parts, including cylinders, plates, springs, riveted joints, bearings, shafts, gears, pulleys, and belts. Lectures, recitations, and drawing. Prerequisite, strength of materials. Two hours credit.

Course 22.—SANITATION AND WATER SUPPLY. A study of the problems of water supply for rural homes and cities, with special reference to the cities of Kansas; purification of water; types of water systems, sewer systems and sewage disposal. Lectures and inspection trips. Two hours credit.

Course 23.—ELEMENTARY STEAM POWER PLANTS. A brief study of the general problems of steam power generation; fuels, combustion and steam generation; a study of boiler and engine types; engine mechanisms and power plant auxiliaries; laboratory practice in testing of steam machinery. Three hours credit.

Course 24.—THERMODYNAMICS. The relation between heat and mechanical energy; theory of heat engines; the action of vapors under the influence of heat and pressure. Two hours credit.

Course 25.—STEAM TURBINES. A special study of the different types of steam turbines with the auxiliary apparatus used with them. Inspection trips to power plants using these different types of turbines. Two hours credit.

Course 26.—HYDRAULICS. The study of the laws governing the action of liquids in pipes and their flow through pipes and over weirs. The types of pumping and hydraulic power machinery with special reference to the uses of pumps in removing water from mines. Three hours credit.

Course 27.—REFRIGERATION. A study of the construction and operation of the principal types of refrigerating machinery as used in cold-storage plants and in the manufacture of artificial ice. Inspection trips to plants using these types of machinery. Two hours credit.

Course 28.—SEWERS, ROADS AND PAVEMENTS. An elementary course in the design and construction of sewers and storm drains. The collection and distribution of the water supplies, with more detailed discussions of the apparatus used in purifying water and sewage. Two hours credit.

Course 51.—ADVANCED CALCULUS. This course is intended for those who wish a better knowledge of calculus. It includes center of gravity; moments of inertia; center and radius of curvature; series; expansion of functions; successive and partial differentiation and integration; differential equations; hyperbolic functions; solution of higher equations; miscellaneous practical applications. Three hours credit. Prerequisite, course 7.

Course 52.—HISTORY OF MATHEMATICS. The growth and development of mathematics from the historical standpoint. The development of the applications of mathematics to practical affairs. This course also includes a study of the content of present courses in arithmetic, algebra, geometry, unified mathematics. Applied mathematics courses and their value in industrial education. Two hours credit. Prerequisite, fourteen hours of college mathematics.

Course 53.—HISTORY OF ASTRONOMY. A continuation of Astronomy I, involving a discussion of the quantitative measurements of celestial bodies. Some experimental work with the spectrometer in determining index of refraction, wave length, and elements in the sun. Observations of the apparent motions of the sun, moon and planets. Two hours credit. Prerequisite, Descriptive Astronomy.

Course 54.—THEORETICAL AND APPLIED MECHANICS. A study of the laws of statics and dynamics; action of forces upon bodies and the resultant motions; centers of gravity; moments of inertia; work and energy; impulse; momentum and impact; friction and lubrication; centrifugal force and the balancing of machines. Three hours credit. Prerequisite, course 51.

Course 55.—GRAPHIC STATICS. The properties of equilibrium polygons and other methods of representing the actions of forces, with application to the determination of stresses in beams, trusses, and arches. Two hours credit. Prerequisite, Strength of Materials.

Course 56.—MECHANICS OF MATERIALS. Elastic and ultimate strength; materials of engineering; theory of beams and columns; torsion of shafts; resilience and work; impact and fatigue; design of cylinders, plates, and riveted joints; testing of materials. Three hours credit. Prerequisite, differential and integral calculus.

Music.

See Section X, page 246.

Public Speaking.

See Section III, page 89.

Physical Education.

See Section III, page 109.

SECTION III.

Life Certificate Courses.

The Faculty.

William A. Brandenburg, Ph. B., President.

G. W. Trout, A. B., A. M., Dean of College; Professor of History and Social Sciences.

Odella Nation, B. S., Librarian; Instructor in Library Methods.

Lyle Brower, B. S., Professor of Drawing and Design.

Elsa Schoshusen, A. B., Kindergarten Critic Teacher in the Training School.

Eulalia E. Roseberry, B. S., Professor of Geography.

James Anderson Yates, B. S., M. S., Professor of Chemical and Physical Sciences.

Ermine Owen, M. A., Professor of English.

D. M. Bowen, B. A., Professor of Education.

Oris P. Dellinger, A. B., Ph. D., Professor of Biology.

J. A. G. Shirk, M. S., Professor of Mathematics and Applied Mechanics.

A. H. Whitesitt, B. S., Professor of Industrial and Applied Arts.

Adela Zoe Wolcott, Ph. B., A. M., Professor of Home Economics, and Joint Director.

Margaret Coventry, A. B., Assistant Professor Physical Sciences.

William Edgar Ringle, A. B., Associate Professor of Biology.

F. H. Dickinson, Assistant Professor of Industrial Arts.

Hattie Moore-Mitchell, A. M., Professor of Methodology, and Dean for Women.

E. F. Sholtz, B. S., Director of Commerce.

J. G. Wilkins, Instructor in Free-hand Drawing and Wood Finishing.

Annie Marriott, B. S., Assistant Professor of Domestic Science.

Walter McCray, Director of Music.

O. F. Grubbs, A. B., B. S., Associate Professor of History.

R. Hesselberg, Professor of Violin.

Charles R. Wasser, Jr., Assistant Professor of Industrial Arts.

Samuel J. Pease, M. A., Professor of Languages.

Greta Eulalie Smith, B. S., Professor of Domestic Art.

Vivian Atwood, Assistant Professor of Applied Arts.

Ernest Bennett, B. S., Assistant Professor of Languages.

Edgar Nelson Mendenhall, Ph. B., Professor of Rural Education.

Zoe A. Thralls, B. Ped., Ph. B., Assistant Professor of Geography.

Bess M. Hayden, Intermediate Critic Teacher.

Richard Roberts Sigler, A. M., Associate Professor of Biology.

C. O. Van Dyke, M. A., Assistant Professor of Mathematics.

O. B. Badger, Assistant Professor of Industrial Arts.

Edith E. Casseday, Assistant Professor of Home Economics.

George V. Emery, A. B., Associate Professor of Physical Sciences.

Clinton W. Wright, A. B., Assistant Professor of Mathematics.

Anne Caseley, A. B., Assistant Professor of History.

WM. H. MATTHEWS, Instructor in Physical Sciences.
JESSIE C. LESLIE, B. S., Critic Teacher Junior High School.
ANTHONY STANKOWITCH, Professor of Piano.
ELIZABETH HALLENBECK GILBERT, Voice Instructor.
W. R. CLEVELAND, B. S., M. S., Associate Professor of Physical Sciences.
WALTER S. LYERLA, B. S., Instructor in Commerce.
WINONA MCLATCHEY, Instructor in Public School Music.
PRESTON E. REED, A. B., Associate Professor of English.
ESTHER STEWART, Instructor in Piano.
L. C. GUFFEY, Instructor in Commerce.
BERTHA A. BENNETT, B. S., Director of Physical Education for Women.
ETHEL MAE HILL, B. S., Assistant Director of Physical Education for Women.
JOHN H. BOWERS, Ph. D., LL. B., Associate Professor of History.
FRANK DEERWESTER, A. B., Pd. M., Pd. D., Associate Professor of Education.
H. T. JAMES, Professor of Industrial Arts.
EVELYN JOAN METZGER, Assistant Professor of Drawing.
NORA NEAL, Piano Instructor.
HENRIETTE PRIBNOW, B. S., Assistant Professor of Home Economics.
LAURA L. REMER, Primary Critic Teacher.
ANNE DEN BLEYKER, Primary Critic Teacher.
HAROLD F. SCHORY, A. B., B. O., M. A., Professor of Public Speaking and Expression.
AGNES SAUNDERS, A. B., A. M., Professor of Home Economics, and Joint Director.
G. W. WEEDE, B. S., D. D. S., Director of Physical Education and Athletics for Men.
ERNEST HAGLER, Automobile Instructor.

Student Assistants.

HAROLD ALYEA, Physical Education.
VENA CONNET, Education.
EVA CUNNINGHAM, Household Arts.
VERNON ELLIS, Physical Sciences.
E. A. FLOTTMAN, Physical Sciences.
FINIS GREEN, Biology.
LEO E. HUDIBURG, Physical Science.
GLENN B. LITTON, Geography.
THOMAS MASON, Physical Education.
ROBLEY MATTHEWS, Biology.
ROBERT MENDENHALL, Physical Sciences.
GRETCHEN MORRIS, Physical Education.
ALLEN PARK, Physical Sciences.
F. M. STOFFER, Biology.
LAURENCE SUTHERLAND, Physical Sciences.
MARY L. WALTER, English.
GEO. O. WHITE, English.
T. F. ZIEGLER, Physical Sciences.

Life Certificate Courses.

The following courses are outlined for those students seeking a life certificate to teach in some special field of elementary school work. Candidates for these courses must offer at least 15 units of high-school work, or its equivalent, for entrance requirements.

KINDERGARTEN COURSE.

FRESHMAN YEAR.

First Semester:	hrs.	*Second Semester:*	hrs.
English	4	General Psychology	3
Physiology	3	Teaching	4
Elementary Drawing	2	Public-school Music	2
Introduction to Education	3	Stories and Literature	2
Physical Education	1	Primary Geography	2
Elective	3	Physical Education	1
		Elective	2
	16		16

SOPHOMORE YEAR.

First Semester:	hrs.	*Second Semester:*	hrs.
American History	4	Modern Education	3
Elementary Arts	2	Child Psychology	2
Primary Methods	2	Nature Study	2
Primary Teaching	3	Kindergarten Theory	3
Elective	4	Elective	5
	15		15

PRIMARY TEACHERS' COURSE.

FRESHMAN YEAR.

First Semester:	hrs.	*Second Semester:*	hrs.
English	4	General Psychology	3
Physiology	3	Primary Methods	2
Introduction to Education	3	Public-school Music	2
Primary Drawing	2	Nature Study	2
Primary Methods	2	Elementary Arts	2
Physical Education	1	Physical Education	1
Elective	1	Elective	4
	16		16

SOPHOMORE YEAR.

First Semester:	hrs.	*Second Semester:*	hrs.
Child Psychology	2	Modern Education	3
American History	4	Primary Geography	2
Teaching (Kindergarten)	3	Stories and Literature	2
Science	2	Primary Teaching	3
Elective	4	Play and Playground	2
		Elective	3
	15		15

INTERMEDIATE TEACHERS' COURSE.

FRESHMAN YEAR.

First Semester:	hrs.	*Second Semester:*	hrs.
English	4	General Psychology	3
Physiology	3	Physiography	3 or 5
Industrial Art	2	Grade Methods	2
Introduction to Education	3	Public-school Music	2
Grade Methods	2	Industrial Art	2
Physical Education	1	Physical Education	1
Elective	1	Elective	3 or 1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
History	4	Mathematics	3
Nature Study	2	Modern Education	3
Teaching	3	Playground	2
Electives	4	Nature Study	2
Science	2	Elective	5
	15		15

RURAL TEACHERS' COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
English	4	Psychology	3
Rural Education	3	Physiology	3
Nature Study or Geography	2	Rural Agriculture	2
El. Wood Work or Home Econ	3	Methods	2
Physical Education	1	Playground	2
Elective	3	Elective	4
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
General Science	2	American History	4
Mathematics	3	Rural Education	3
Rural Sociology	2	Home Economics	3
Public-school Music	2	Arts and Crafts	2
Elective	3	Elective	3
Rural Teaching	3		15
	15		

Students who are not high-school graduates, having taught successfully for five years and holding a First-grade County Certificate, on entering may receive a Three-year Certificate on completion of the first year of the Kindergarten, Primary, Intermediate Grade Teachers' or Rural Teachers' courses and eight additional hours, or a Life Certificate on completion of the two-year courses above mentioned and sixteen additional hours chosen from the following subjects:

	hrs.		*hrs.*
General Chemistry	5	General Biology	5
German or French	8	History	4
Sociology	5	Economics	5
Mathematics	4	Home Economics	8
Industrial	8	Agriculture	4
Commerce	4	Education	4
Physiography	5		

JUNIOR HIGH SCHOOL OR DEPARTMENTAL TEACHING.

GENERAL REQUIREMENTS.

	hrs.
English	4
Education	14
Physical Education	2
	20

COURSE REQUIREMENTS.

A major group of 10 hours each from any two subjects in which a major is offered:

	hrs.	
English	10	20
History	10	
Biological Science	10	
Physical Science	10	
Mathematics	10	
Languages	10	
Household Economics	10	
Industrial Arts	10	
Geography	10	

A minor group of 12 hours selected from the following:

	hrs.	
Grade Methods	4	12
Play and Playground	2	
General Science	2	
Elementary Sociology	3	
Public Speaking	3	
Advanced Civics	3	

AGRICULTURE COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
General Agriculture	3	Agronomy	5
English	4	Psychology	3
Biology I	3	Elementary Education	3
Manual	4	Biology II	3
Physical Education I	1	Physical Education	1
	15		15

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Soils and Fertilizers	5	Agriculture	4
Animal Husbandry	3	Teaching	3
Chemistry	5	Modern Education	3
Methods	2	Genetics	2
Elective	1	Electives	4
	16		16

INDUSTRIAL PHYSICS COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Chemistry	5	Psychology	3
Industrial Mathematics	3	Plumbing and Pipe Fitting (Physics 15)	2
Physical Education (1)	1	Physical Education (2)	1
Electives	7	Electives	8
		Gas Engines (17*a*)	2
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Elementary Education	3	History of Education	3
General Methods	2	Gas Engine (Electricity 18*b*)	2
Physics (16), Electric Wiring	2	Physics (2), Electric Wiring	2
Physics (18)	4	Teaching	3
Electives	4	Electives	5
	15		15

Outline of Two-year Course for Life Certificate in Public Speaking and Expression.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Public Speaking (1)	3	Public Speaking (2)	3
Expression (3)	2	Expression (4)	2
Argumentation and Debate (7)	2	Physical Education (2)	1
Physical Education (1)	1	Electives	10
Electives	8		
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Literary Interpretation (5)	2	Masterpieces (52)	3
Masterpieces (51)	3	Parliamentary Law	2
English	3	Electives	10
Electives	7		
	15		15

Students who are high-school graduates, or equivalent, upon completion of the above course, and who elect 12 hours of Education are entitled to a Life Certificate. Students expecting a Life Certificate at the end of the second year must offer at least 16 hours and not more than 2 hours in this department; 12 hours in a minor, and not more than hours in any other department.

GEOGRAPHY.

FRESHMAN YEAR.

irst Semester:	*hrs.*	*Second Semester:*	*hrs.*
Physiography	3 or 5	General Science	2
English I	4	Geography Am. History	3
Biology II	4	General Psychology	3
Physical Education	1	General Mathematics	2
Electives	4 or 2	Physical Education	1
		Electives	4
	16		15

SOPHOMORE YEAR.

irst Semester:	*hrs.*	*Second Semester:*	*hrs.*
Industrial or Commercial Geography	3	Modern Education	3
Elementary Education	3	Sociology	3
American History I	4	Continent Study:	
Teaching	3	Geography 11, 51 or 52	3 or 4
Elective	3	Geography Methods	3
		Electives	2 or 3
	16		15

Special Life Certificate Courses.

COMMERCE COURSE.

FRESHMAN YEAR.

Students who are high-school graduates or equivalent, upon compleion of the course in Commerce, and who elect Psychology 3 hours, Methods 2 hours, Modern Education 3 hours, Practice Teaching 3 hours, and Elective 3 hours in Education, will be entitled to a Life Certificate n Commerce. Those who do not desire a Life Certificate in Commerce, see course on page 238. Students pursuing degree courses may elect 8 hours of commerce work.

irst Semester:	*hrs.*	*Second Semester:*	*hrs.*
Bookkeeping (1)	5	Bookkeeping and Accounting (2)	5
Algebra (3*a*)	2	Theory of Investment (10)	2
Commercial Geography (6)	3	Business Law (3)	2
Penmanship (4)	1	Penmanship (5)	1
Electives	4	Parliamentary Law (61)	2
Physical Education	1	Electives	3
		Physical Education	1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shorthand (6)	5	Dictation and Office Practice (7)	5
English (1)	4	Epic (2)	4
Commercial Methods (10)	1	Salesmanship (11)	2
Typewriting (8)	2	Typewriting (9)	2
Electives	4	Electives	3
	16		16

DRAWING SUPERVISION.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Elementary Drawing (1)	2	Principles of Design (5)	2
History of Art (2)	1	History of Ornament (6)	1
Primary Drawing (3*a*)	2	Primary Arts (3*b*)	2
English	4	Psychology (7)	3
Education (1)	3	Physical Education	1
Physical Education	1	Electives	6
Electives	3		
	16		15

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Intermediate Arts (8*a*)	2	Intermediate Arts (8*b*)	2
Interior Decoration (25)	2	Costume Design (26)	2
Psychology (8)	2	Art Appreciation (30)	2
Biology (14)	4	Modern Education	3
Teaching	3	Teaching	3
Electives	3	Electives	3
	16		15

REQUIRED FOR LIFE DIPLOMA IN DRAWING SUPERVISION —Those who have not graduated from an accredited high school, or who are unable to show proficiency by credits from institutions of high learning, or grades by examination in the following branches, will be required to take the same in addition to the above: Physiology, 4 hours, History, 4 hours, Elementary Science, 4 hours, Agriculture, 4 hours, Rhetoric and Composition, 4 hours.

The electives allowed will permit a student in this course to prepare herself to teach other subjects in combination with drawings if she desires to do so.

MUSIC SUPERVISORS' COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Expression	3	History of Music (1 day)	2
Sight Singing (4 days)	2	Psychology	3
History of Music (1 day)	2	Voice	2
Voice	2	Piano	2
Piano	2	Harmony (2 days)	2
Physical Education (1)	1	Teaching 5, Lectures (1 day)	2
Teaching 5, Lectures (1 day)	2	Physical Education (2)	1
Harmony	2	Conducting	2
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Voice	2	Voice	2
Piano	2	Piano	2
Harmony	2	Counterpoint	2
Electives	1	Chorus and Orchestra Conducting	2
Orchestration	2	Modern Education	3
Chorus and Orchestra Conducting	2	Electives	1
Special Methods	2	Teaching	3
Management	2		
	15		15

PHYSICAL EDUCATION COURSES FOR MEN.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Biology (1)	3	Biology (2)	3
English (1)	4	Public Speaking (2)	3
Physical Education (1)	1	Psychology (7)	3
Physical Education (7)	3	Physical Education (2)	1
Physical Education (5)	1	Physical Education (7)	3
*Electives	5	Physical Education (6)	1
		*Electives	3
	17		17

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Biology (11) or (55)	4 or 3	Biology (18)	1
Methods of Teaching (1)	2	Modern Education (2)	3
Physical Education (53)	1	Psychology (8) or (9)	2 or 3
Physical Education (3)	2	Physical Education (54)	1
Physical Education (8)	3	Physical Education (4)	2
*Electives	5 or 6	Physical Education (8)	3
		*Electives	5 or 4
	17		17

PHYSICAL EDUCATION COURSES FOR WOMEN.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs*
Biology (1)	3	Biology (11) (Physiology)	4
English (1)	4	English (2)	4
History (2, or 1 & 2, or 3 & 4)	4	Sociology	
Chemistry (1)	5	Psychology (7)	
Physical Education (1)	1	Physical Education (2)	
	17		1

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* All electives must be approved by the heads of the departments involved.

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Hygiene (17)	3	Teaching	3
Methods	2	Modern Education (2)	3
Physical Education (57)	2	Physical Education (58)	2
Physical Education (3)	1	Physical Education (56)	2
Child Psychology (8)	2	Physical Education (4)	1
Economics	5	Electives	4
	15		15

Biological Sciences.

O. P. Dellinger, Professor.
W. E. Ringle, Associate Professor.
Richard Sigler, Associate Professor.
J. R. Wells, Assistant Professor.
Finis Green, Student Assistant.
Robley Matthews, Student Assistant.
Frank Stoffer, Student Assistant.

There has developed within recent years a demand for better and more universal biological instruction. With the introduction of agriculture and domestic science into our schools, a knowledge of biology is demanded of a much larger number of individuals. For a long time biology was taught for its general cultural value or in its application to medicine; and to-day most of the courses in colleges and universities, and in some normal schools, are organized to meet the needs of the general student or the student of medicine. Teachers of biology have failed to realize that the mass of biological instruction from now on must be largely designed for students in agriculture, domestic science, education, and medicine, and the courses must be so constructed as to meet the special needs of these students.

It is the plan and purpose of the Department of Biology to offer instruction in biology as it applies to these fields; and many of the courses organized are especially for the student of domestic science, agriculture, or education. There are, however, a few courses of a general nature, but they are fundamental to any education.

LIFE CERTIFICATE COURSES.

Course 1.—General Biology. This course is an introduction to the other biological sciences, and aims to acquaint the student with the elementary forms and forces of living nature. Here the student gets his first glimpses of the laws of evolution and heredity as they apply to human progress. Much attention is paid to the evolution of conduct of life. Types for study are selected as far as possible from the common animals. Three hours credit. Laboratory fee for material used.

Course 2.—General Biology (continued). In this course the student studies the laws of growth and reproduction of living organisms as they are illustrated in plants. Here emphasis is given to the economic phases of botany. Plants are studied in their relation to medicine, textiles, lumber, ornamentation and food production. Attention is given to propagation and distribution. Three hours credit. Laboratory fee for material used.

Course 11.—Human Physiology. The purpose of this course is to teach those things that will enable the student to make of his or her body, and also the bodies of those they minister to, the most efficient mechanism possible. The requirements of the body as to food, exercise, sleep, fresh air, bathing, etc. The physiological requirements of children, where they differ from the adult, will be emphasized. The physiology of reproduction will receive the attention it deserves. Daily for twenty weeks. Four hours credit. Laboratory fee for material used.

Course 12.—PHYSIOLOGY AND HYGIENE. This is a course designed especially for grade and rural school-teachers, covering the principles of physiology and hygiene. Special emphasis is laid on ventilation, foods, play, eye and ear hygiene, and those phases of the subject which are of interest to every grade school-teacher. Three hours credit. Fall and summer terms.

Course 14.—APPLIED BIOLOGY I—NATURE STUDY. This course is designed especially for primary and grade teachers. It attempts to answer the question, What knowledge of living forms is adapted to children between the ages of six and fifteen? A review of the literature in this field is also given. Four hours credit.

Course 15.—APPLIED BIOLOGY II—ELEMENTARY AGRICULTURE. The principles of vegetable gardening, fruit growing, landscape gardening, forestry, and the elements of animal husbandry form the basis of this course. Two hours credit.

Course 16.—GENERAL BACTERIOLOGY. This course is required of all students who major in domestic science or agriculture, and is open to any student in the college course. It is a general introductory course consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit. Fall, spring and summer terms. Laboratory fee for materials used.

Course 17.—HYGIENE AND PUBLIC HEALTH. A course in elementary bacteriology designed especially for grade and rural teachers. The course is a general survey of the field of bacteriology as it relates to civic and school sanitation, agriculture and the preservation of foods The student becomes familiar with immunology and the physiological factors involved in the natural resistance to disease. Three hours credit Fall and summer terms.

Course 18.—VOCATIONAL HYGIENE AND SANITATION. A course designed especially for the students in industrial arts. The principle of hygiene and sanitation as related to the industries and the men i industrial work form the basis of this course. One hour credit. Sprin and summer terms.

Course 19.—ENTOMOLOGY. A course in the classification and collectio of life histories of the common insects, also a study in the methods o control of the common injurious insects in the orchard, garden and fiel crops. Two hours credit. Summer terms.

AGRICULTURE.

The work of this subject is conducted by means of textbook study, reference work, lectures, demonstrations, observation of field work, laboratory experiments, practical work in the school gardens and at the experiment stations. The experiment stations consist of about thirty-fiv acres devoted to various experiments and tests that have special value t the teachers and farmers in this section of the country. Through th affiliation of other departments, practical courses in farm blacksmithin farm carpentry, gas engines and farm mechanics have been worked o to meet the needs of those specializing in agriculture. The followin courses are offered:

Course 1.—Rural-school Agriculture. This course is designed to neet the needs of those who are preparing to teach in the grades and ural schools. Practical experiments and demonstrations will be outined for each grade. First semester; one hour lecture, four hours labratory and field. Two hours credit.

Course 2.—General Agriculture. A course in which a general surey of the whole field of agriculture is taken. This course is planned specially for the students who wish a general introduction to this great ndustry. While Biology 1, 2 or 12 is desirable as a prerequisite, it is ot necessary. Three hours credit.

Course 3.—Vegetable Gardening. Principles and practices used in rowing vegetables. Special attention is given to the home garden. The coring, marketing, and canning of vegetables is given special emphasis. he work has been arranged to meet the needs of those specializing in omestic Science and Agriculture. Second semester; two hours lecture, wo hours laboratory and field. Two hours credit.

Course 4.—Agronomy. Lectures and recitations on the history, prouction, cultivation, harvesting and marketing of farm crops. The aboratory and field work will consist of a study of all crops adapted to his region and judging of different cereals. First semester; two hours ecture, four hours laboratory. Five hours credit.

Course 5.—Soils and Fertilizers. Soils are studied as to origin, kind and fertility. Much attention is given to the question of how to keep soils productive and how to keep soils to a high state of production. Twenty weeks. Five hours credit. Laboratory fee for material used.

Course 6.—Animal Husbandry. This course includes what is usually given in more extensive courses, much attention being given the subjects of breeds and types of farm animals, stock judging, feeds and feeding, and care and diseases of animals. In it the student becomes acquainted with the things necessary to intelligent management of stock on the farm. Two hours lecture, four hours laboratory. Three hours credit.

Course 7.—Farm Management. Selection of farms; various systems of farming; investment of capital; scoring of farms in the community; farm layout; labor; details, marketing, farm accounting. Five hours credit.

Course 8.—Methods in Agricultural Education. The origin and development of agricultural education, especially for teachers preparing to teach in rural and secondary schools. In this course the best methods and materials for the teaching of agriculture will receive careful attention. Practice will be given in outlining agricultural courses. Required of all students preparing to teach agriculture. Prerequisite, ten hours in Agriculture. Two hours credit.

Course 9.—Agriculture Club. The Agriculture Club meets regularly on Wednesday, at the noon hour. Here the best articles from the leading agricultural magazines and periodicals are reviewed and discussed. A light luncheon is served, and this work is of special value to those preparing to teach agriculture. Open to all agriculture students.

Chemical and Physical Science.

See Section II, page 57.

Commerce.

See Section IX, page 241.

Drawing and Design.

LYLE BROWER, Professor of Drawing.
JOHN WILKINS, Assistant.
EVELYN METZGER, Assistant.

The department aims to prepare teachers to meet the demands of the public schools for instruction in all branches of drawing, and to prepare supervisors and departmental teachers in art. Also, the students in the industrial courses are required to take many of the studies in this department. The close relation of drawing and designing with the industries is recognized, and all processes of construction must be prepared in the designing and drafting rooms. The art teacher must understand the many possibilities which drawing may open in the life of the child.

Students from this department are holding important positions as art teachers; one as the drawing teacher in a state normal, others as supervisors, departmental and special teachers of drawing.

The following courses are offered for special art students and for students in the industrial departments:

BASIC COURSES.

Course 1.—ELEMENTARY DRAWING A systematic development of observational powers, together with the training of the hand in representing common objects—circular, parallel and angular perspective applied to the exterior and interior of a house—landscape composition and constructive lettering for posters and practical advertising. The course includes form study, drawing of objects in accented outline, linear and aërial perspective, nature drawing. Sketches from costumed models will be made on alternate weeks. One hour credit.

Course 2.—HISTORY OF ART. A general review of the development of art throughout the ages. The student will make written outline of the typical historic types. The purpose is to give a clear idea of the relation of the development of concrete art with the evolution of life. Lectures, reading and written work. One hour credit.

Course 3*a*—PRIMARY DRAWING. Drawing for the kindergarten and the first three grades of the public schools. A course for those who wish to teach or supervise this work. Drawing, design, and color suitable for the schoolroom. Methods of teaching and organization of the work, with discussion of the relations to public-school problems. Written outlines for these grades. Picture study. One hour credit.

Course 3*b*.—PRIMARY ARTS. Construction work for the kindergarten and first three grades. Paper cutting, stick printing, pasting and mounting, raphia work, weaving with paper and yarn, and sand-table work The work in direct connection with course 3*a*, emphasizing the constructive element. The various materials suited to the work are studied with reference to source of supply, care and use. One hour credit.

Course 3*c*—SPECIAL DRAWING SUPERVISION, PRIMARY.—For teachers in the public schools who are without drawing supervisors. Suggestive outlines for work are supplied each month of the school year, giving references relating to materials, supplies and work possible in the schoo room. One hour credit.

Course 5.—PRINCIPLES OF DESIGN. The study of the principles o design, with studio practice in the structure of pattern, space filling an he use of color and value. The application in design is directly related o definite problems. Two hours credit. Room 211, Carney Hall.

Course 6.—HISTORY OF ORNAMENT. A study of the distinctive types of historic ornament with reference to their origin, development, derivaion from natural and geometric forms, and the influence of individuality and environment upon the characteristic forms. The course is given with eference to the relation of ornament to practical use, for ornament must ake its proper place in the industrial arts. Decoration must be used to mphasize the beauty which may be found in the lines and spaces of a onstructed article. One hour credit.

Course 7*a*—CHARCOAL DRAWING. A study from historic ornament, asts and still life in outline, values and modeling in mass; attention eing given to the light and dark masses, with proportions of each, half ones and high lights, cast shadows, reflected light, center of interest. One hour credit.

Course 7*b*.—LIFE DRAWING. Drawing from life in costumes. Sketch of fifteen or twenty minutes each made from the costume figure in different poses. Careful attention is given to action of the figure and draping of the costume. One hour credit.

Course 8*a*.—INTERMEDIATE DRAWING For the grades above third grade. For those who expect to supervise this work in the public schools. Typical forms in drawing, elements of mechanical drawing, and the relation of drawing to the work in the shop or sewing classes, and to the regular school studies. Silhouettes, picture making, foreshortening, convergence, aids and tests in drawing, picture study. Two hours credit.

Course 8*b*.—INTERMEDIATE ARTS. This course is planned for those who teach public-school drawing and handwork above the third grade. Suitable problems in construction and applied design will be offered. The use of the coping saw and the designing and decorating of wooden toys will be a special feature of this course.

Course 9.—THEORY OF COLOR. A study of color to develop and refine the color sense, that the student may see, appreciate and enjoy the colors in nature and be able to use color with greater understanding. Primary colors in full intensity, subdued colors, tints, shades, hues and complementary colors; harmony through analogy and contrast. Physical and psychological effects of color. Prerequisite, course 5. Two hours credit.

MECHANICAL.

Course 11.—MECHANICAL DRAWING. A course of lectures and the working of drawings are included as a part of the regular work in preparation for teaching home economics in public schools. A series of exercises is given in the making of working drawings of pieces of school equipment and layouts of school rooms. One hour credit.

Course 12.—ELEMENTARY ARCHITECTURE A practical course in reading and understanding house plans. The course deals directly with the requirements of the prospective home builder. A study is made of a typical plan which will involve the essential elements of a modern home, one- and two-story, with reference to location, lot, finance, suitable plan, arrangement of rooms for convenience, light, sanitation and heat, materials and cost. Prerequisite, course 10. Two hours credit.

Course 16*a*—SHADES AND SHADOWS. Determination of shade surfaces and casting their shadows; isometric, cabinet and orthographic projections. The purpose of this course is to give a better understanding of the projections used in working drawings. Prerequisite, course 12. One hour credit.

Course 16*b*.—Perspective. The theory of mechanical perspective, with its application to the solution of problems in architectural design and in interior decoration, or in the general drawing of articles to be constructed, furniture, machines, etc. Prerequisite, course 12. One hour credit.

Course 18.—Architectural Design. The designing of a modern residence with reference to its location, plan, convenience, sanitation, heating, lighting, and materials. Working plans and elevations, with detail drawings of special interior and exterior constructions. The instructions must conform to the actual practice in building operations. Each student is expected to design a house which he would build for himself. Other constructions, as schoolhouse, barn, etc., may be substituted or included. Prerequisite, course 12. Two hours credit.

Course 19.—Specifications and Estimates of Cost. A study of the modern house in relation to the cost of a medium-priced home. Cost of materials, types and exteriors, plans and heating systems. Detailed specifications for the home designed in course 13. Prerequisite, course 12 and 18. Two hours credit.

DESIGN.

Course 21.—Classical Orders. The student is required to draw the orders, to accustom his eye to good architectural proportions. The drawings will be rendered in ink and color values. Designs are built up from compositions of details of the orders, giving ample latitude for exercising ability in design. Prerequisite, course 18. Two hours credit.

Course 22.—Lettering and Poster Making. A course which train the student to make the announcements, notices, cards and posters needed in school work. The ability to make good letters and draw posters i valuable to the public-school teacher. Special attention is given t design, composition and colors. Two hours credit.

Course 24*a*.—Home Incentive. A study of the basic needs of a home the evolution of the home, relation to human life, individuality, development of the American house. Different types of dwellings, their advantages or disadvantages, sites, location, methods of purchase, financ and contracting. One hour credit.

Course 24*b*.—Home Planning. A study of conventional plan of th city or country house; distinctive rooms and their arrangements, in th plan for convenience, economy, light, heat and sanitation. The studen must gain a fair knowledge of building materials and their relativ cost in construction. One hour credit.

Course 25.—Interior Decoration. The study of line, proportion spacing, arrangement and color as applied to home decoration. Lecture and studio practice. Credit, two hours.

Course 56.—Costume Design. The study of the rhythm and grac of line in the figure and costume. Costumes and colors for differen types of figures and complexions. Color and texture combinations various materials. Sketching from gowns and hats and original design Lectures and studio practice. Credit, two hours.

ADVANCED.

Course 30.—ART APPRECIATION. A general survey of the field of art all ages, with special reference to architecture and design. A study of he great masterpieces in painting, sculpture, and architecture. Lectures nd reading, with a written appreciation of the great works of art. llustrated with lantern. Two hours credit.

Course 32.—METHODS AND MANAGEMENT. Methods of conducting rawing classes in the public schools; relation of drawing to the general chool courses in correlating the work; administration and supervision of rawing; equipment, materials and supplies; outlines of work. Two ours credit.

Course 32.—ADVANCED DRAWING. For students possessing talent and raining who desire to pursue advanced work along their special lines. wo hours credit.

Course 33.—ART PHOTOGRAPHY. The application of art principles to hotography, with instructions in the use of the camera in field and aboratory work; developing, printing, and mounting; enlargements, antern slides.

Course 34.—WATER COLOR. A special study of rendering in pure vater color. Rectangular models in simple full washes of monotone; ase form with rounded effect in color; flower sprays from copy and rom still life. Landscape studies from copy indoors, and outdoors ketching of simple landscapes and street scenes. Two or four hours redit.

Education.

See Section II, page 65.

English.

See Section II, page 70.

Geography.

See Section II, page 71.

History and Social Sciences.

See Section II, page 73.

Home Economics.

See Section V, page 142.

Industrial Arts.

See Section IV, page 117.

Methodology.

Hattie Moore-Mitchell, Professor Methodology.
Jane Carroll, Assistant Professor.

Foreword.—The day is past when the only requisite sought by a board of education is that the candidate has good grades in academic lines. Such a grade reveals the ability as a student but not necessarily as instructor.

The aim of the Methodology Department is to make clearer the teacher's privilege and the teacher's preparation from the standpoint of art in instruction.

Courses. Seven courses are offered for 1920-1921. College credits. Prerequisites: One semester's work in psychology is recommended before taking the course in General Methods. Students enrolling in Normal Training Methods must have at least junior standing in the college course.

Notebooks. Notebooks are indexed and catalogued in such a way that additional material may be subsequently incorporated. Mimeographed copies of poems, drills, board designs, programs and bibliography are filed in an indexed clipping book which permits future contributions after the course is completed.

Educational Journals. The department carries several subscriptions for each of the different current educational publications, an articles relevant to the regular work or season are reviewed by class. A "speaking acquaintance" with these various journals is cultivate throughout the year. One quiz in each course is concerned entirely wit reference to work from these journals.

Entrance Examinations. Teachers holding first-grade certificate and having had five years' successful experience, may make applicatio for entrance examination. Two hours credit in grade methods. Al such application must be made within the first ten days from openin of session. This test, being based on experience, rather than formal tex is not identical with the regular class work, and a teacher being grante this entrance credit by examination may, with profit, enroll in regula class work for remaining two hours' credit offered in the grade teacher course.

Extension and Correspondence Work. The better part of a clas recitation in methods depends upon the personal element. The actu material introduced as illustration, the demonstration (before the class) followed by comment and criticism, the standardization of one's effort b comparison and contrast with work of others is impossible by correspon ence, hence no method courses (except the two hours credit mentioned i foregoing paragraph) are offered except in residence work.

Course 51.—General Methods. Text: Thorndike's Principles Teaching. One year's work in psychology is recommended as prerequisit although mature students with experience in teaching, or high-scho graduates from Normal Training Course may carry the work.

This course presents teaching as a scientific profession as well as practical service in imparting information. The application of princip to the current educational problems is a dominant feature of the cours Reviews in typewritten form enable the student in his study of the te in noting points needing library reference or report from personal o servation. Course is offered each semester. Students in this course a allowed three "substitute recitations." See Foreword (substitute recit tion). Two hours credit.

PRIMARY METHODS.

Primary Training League. This organization is instrumental in holding the fellowship among primary teachers after they leave college. The membership roll constitutes a mailing list and directory.

Thesis. Each student completing special course for primary teachers presents a thesis as part of last semester's work. In order that some estimate may be gained concerning range of subject and material for such theses, the following list of subjects is cited from manuscripts added to this department by students completing the course.

SUGGESTIVE SUBJECTS FOR FINAL THESES IN PRIMARY COURSE.

Special day program.
Recreation plans.
The last day of school.
Washington's birthday.
Arbor Day program.
Through the gates of story land.
Christmas in foreign lands.
Musical devices.
When company comes.
What I wish the teacher before me had done.
Glimpses into other teachers' schools.
Half hours with boys and girls.
Parents' meeting.
Language in the third grade.
Psychology of an invitation.
The day of the program.
What to do the first day.
The primary teacher's trunk.
Decoration Day.
Difficulties in teaching spelling.
The primary teacher's notebook.
The primary had a picnic.
Closing-day program.
What a primary teacher ought not to see.
Parents, school and teacher.
First four months of school.
Why school children are so parrot-like.
How my school keeps Hallowe'en.
Some things I must avoid in teaching.
Lincoln Day program.
My first day's experience as a teacher.
The ideal primary room.
Primary teacher's review and resolve.
Things in my childhood that have helped me understand my pupils.
The teacher's play-hour duty.
Lest we forget we once were primary people.
Beautifying the school ground.
Essentials in playing a game.
Things I am going to do when I teach school.

Course 1. — **Primary Methods.** First semester. While this course is essentially intended for candidates for special primary teaching, yet rural teachers will find the work profitable. A regular organization, known as the Primary Teachers' League, is maintained by students preparing for primary work. The course is enriched by library readings and special lectures. Each member of the class presents for approval a definite amount of work, charts and devices, in addition to notebooks, as credentials for grades. Primary reading; history and development of recognized methods; advantages and disadvantages claimed for each. Two hours credit.

Course 2. — PRIMARY METHODS. Second semester. Continuation of course 1. Students may enter who have not completed first semester course. Subjects considered: Language work, specimens of work from distant schools, health lessons, rhetoricals, occupation work, "fads and theories." The league sessions during this semester will be addressed by outside educators. Preparatory to receiving credit from this course, applicant prepares discussion or demonstration of some phase of professional primary teaching. Manuscript of this discussion becomes the property of the department. (See Foreword: "Thesis for Primary Methods.") As in course 53, each member of the class prepares a certain number of models, charts and devices ready to be put into actual service. Through the kindness of faculty members in departments of music and physical education, valuable assistance will be given in preparation for primary music and recreation drills. (See Foreword: "Educational Journals.") Two hours credit.

Course 3.—GRADE TEACHERS' COURSE.

CHARTS, POSTERS, WALL DECORATION. The gathering of suitable materials for charts when away from home is a task which does not bring proportional returns. The virtue of such work often lies in the correlation with other studies and the coöperation of home and school in securing material. On account of these two facts, the number of charts required from each student is reduced to the minimum and suggestive types are considered by use of blue-print copies of charts and posters which have been used in the schoolroom under normal conditions throughout the year. Each student compiles a portfolio of these blue prints for future suggestiveness.

NOTEBOOKS.—A well-arranged notebook in methods is frequently of more service to a teacher than the text. Notebooks are indexed and catalogued in such a way that additional material may be subsequently incorporated. Mimeographed copies of poems, drills, board designs, programs and bibliography are filed in an indexed clipping book, which permits future contributions after the course is completed.

GRADE TEACHERS' COURSE.—First semester, Freshman year. Besides the text, discussions and investigations into course of study for elementary grades form a part of this course. Demonstrations of teaching difficult portions given in arithmetic, history, and geography. Throughout the year special lectures are given, entitled "The hand as well as the head." From suggestions from these lectures each student prepares a certain number of articles suitable for hand work in the grades. Preceding the holiday vacation a "school bazaar" is held as class recitation, at which time these models are on exhibition, a placard accompanying each, giving amount and cost of material, time used in making, and grade for which suitable. This course is desirable work for rural teachers. Two hours credit.

Course 4.—GRADE TEACHERS' COURSE. Second semester. A continuation of course 3. Methods of presentation of physiology, grammar, orthography and reading by means of a review from teacher's viewpoint. Special lectures this semester relative to special days, decorations, recreations and experiments. From library assignments a methods annual is compiled, enabling the student completing this course to become a forceful factor in professional efficiency beyond the daily routine of simple textbook teaching. (See Foreword, "Equipment," also "Educational Journals.") Two hours credit.

SUBSTITUTE RECITATION.—Students in general methods and normal training methods have privilege of attending, during the semester, three recitations in other classes giving professional credit. A written report of such visit is made by student in lieu of note from methods recitation from which he is excused. This excuse is granted before each absence, and no substitute recitation credit is granted without such excuse.

Course 56.—NORMAL TRAINING METHODS. Second semester and summer session. Open to students having at least junior standing. The introduction of normal-training courses into 50 of the accredited high schools of Kansas brings with it a demand for teachers who can take charge of the normal training courses. Few schools have an enrollment warranting the services of a special normal training teacher. As a result, the work must be given by one whose special preparation has been in other lines. The demand for this preparation is met in this course for normal training teachers. The bibliography includes the normal training course texts which are used in the various high schools of the state, together with outlines of work, also reviews covering normal training literature edited by the state department. A series of lectures giving definite suggestions as to plans and policy in meeting the state course of study and examination tests for the candidate for normal-training certificate is a valuable feature of this course. Students taking this course will find any standard work on teaching a desirable reference text. Three substitute recitations are allowed during semester. (See Foreword: "Substitute Recitation," also "Equipment.") Two hours credit.

Course I.—METHODS FOR SENIORS IN HIGH SCHOOL. The high school course provides for a half unit in methods and management and in meeting this requirement in the professional course, a class in methods is maintained the last semester for those who are planning to teach directly following their graduation from high school.

This course includes methods in the various studies taught in the elementary schools. Special consideration is given to difficult portions found in the state texts in the common branches. One-half unit credit.

Language.

See section II, page 76.

Mathematics.

See section II, page 82.

Music.

See section X, page 246.

Physical Education for Women.

BERTHA A. BENNETT, Director.
ETHEL HILL, Assistant Director.

Physical training is required for two years, one of which is the freshman year. Each girl is given a thorough physical examination upon entrance and work is prescribed accordingly. No student will be excused from required work except by order of the college physician and physical director for women.

CORRECTIVE AND REMEDIAL GYMNASTICS.

Students found to be unable to carry regular class work will be assigned to classes in corrective and remedial gymnastics. Special effort is made to improve posture and to correct foot defects.

Equipment. The department has a gymnasium in the main building, 50 feet by 50 feet. It is well equipped for the general gymnastic and floor work carried on by the regular classes. The basket-ball floor, situated in the barracks, is 72 feet by 40 feet. Here the intercollegiate and interclass basket-ball schedules are played. Three locker rooms. supplied with steel lockers, are available for the students. The bathing facilities are ample. Outdoor activities are conducted on the athletic field, tennis courts, and the regular playground. The department is well supplied with the necessary equipment to make physical examinations, to give theory instruction, and render first aid. The library is supplied with books on physical training, athletics, both theory and practice, as well as related subjects.

Women's Athletic Association. Membership in this organization is open to all women students who through health activities and athletics win 100 "points." The association has charge of all tennis tournaments and interclass games; the annual field day; the awarding of numerals and the College "M." Interclass games in the following are played: soccer, hockey, volley ball and basket ball.

Electives. For the first six weeks of fall and the last six weeks of spring class work, choice is allowed from the following activities: fall, soccer and hockey; spring, tennis, baseball and field sports.

Girls' Gymnasium Costume. The gymnasium bloomers are of black serge (light weight), made full, plaited at the belt with plaits sewed down five or six inches, elastic at the knee. They may be made at home or bought at the dry-goods stores at Pittsburg. The middies are of white wash goods made regular navy style, with large collars, sleeves that may be rolled up, and with no color upon them anywhere. Black middy ties, black stockings and rubber soled shoes are used. Sweaters are required for use in sports.

DESCRIPTION OF COURSES.

Courses 1 and 2 are required of all freshmen in all courses for the life diploma.

Course 1.—Elementary Physical Education. Hygienic and recreational activities, including formal and natural gymnastics; folk dancing, basket ball, volley ball. First six weeks, choice of soccer or hockey. Three hours weekly. One hour credit.

Course 2.—Continuation of Course 1. Last six weeks, choice of baseball, tennis, field sports. Prerequisite, course 1. Three hours weekly. One hour credit.

Course 53.—Interpretative Dancing. Natural expression in an educational way of human feelings and nature's moods. Prerequisite, courses 1 and 2. Two hours weekly. One hour credit.

Course 54.—Continuation of Course 53. Prerequisite, course 53. Two hours weekly. One hour credit.

Course 56.—Elementary School Physical Education and Playground Methods. Graded material for elementary schools and playground, including schoolroom and playground games, folk dances and mimetic work. One hour recitation weekly. Two hours practice teaching weekly at 10 a. m. in Training School. Two hours credit.

Course 57.—Theory of Physical Education. Aims and methods; history; physical examinations; Kinesiology; practice teaching. Prerequisite, courses 1 and 2. Two hours weekly. Two hours credit.

Course 58.—CONTINUATION OF COURSE 57. Prerequisite, course 57. Two hours weekly. Two hours credit.

Course 29.—LIGHT GYMNASTICS. Exercises of any easy grade for those unable to enter the regular classes. Also corrective and remedial gymnastics.

Course 30.—CONTINUATION OF COURSE 29. Prerequisite, course 29. Two hours weekly. Two hours credit.

Physical training for the High School consists of indoor and outdoor games.

Physical Education.

G. W. WEEDE, Director for Men.
BERTHA A. BENNETT, Director for Women.
PAUL J. ALYEA, Assistant Director.
ETHEL MAE HILL, Assistant Director.

DESIGN OF WORK. The department exercises supervision over the gymnastic, athletic and play activities in the institution, and offers courses in the theory and practice of physical education. The department aims to minister to the physical needs of all students through hygienic, educative and recreative activities, and thus to aid them in the formation of hygienic habits that during their college course they may make profitable preparation for life. Certain special courses are designed to train students in the theory and methods of physical education. A life diploma is given at the completion of the regular two-year physical-education course.

A physical examination is given all students. Assignments in physical exercise are made on the basis of this examination.

Physical education is required of all freshmen unless excused for disability by the college physician. After completing the freshmen requirement, advanced work for a total of four hours of credit must be taken before graduation.

In addition to the gymnasium classes in physical training all young men are encouraged to develop their physical skill by playing on practice teams in various athletic lines. The most proficient of these have opportunity to enter the first team and participate in intercollegiate contests. The college authorities encourage all reasonable and sane athletic development as a means of the training of physical qualities desirable in men everywhere.

The women students have equal opportunity for general physical development. Soccer, tennis, hockey and basket ball teams are organized and intramural games played. No inter-collegiate contests for women are scheduled.

PHYSICAL EDUCATION FOR MEN.

INDOOR FACILITIES: The department has a temporary gymnasium arranged in the former S. A. T. C. barracks which gives floor space 40 feet by 90 feet. It is well equipped for the general gymnastic and floor work carried on by the regular classes. Here the intercollegiate and intramural basketball schedules are played. An inclined seating arrangement at one side of the floor accommodates 500 people. Connected with this floor by a corridor is a large locker room with ample bathing facilities. Regulation uniforms must be worn in the gymnasium. Students are advised not to purchase uniforms until after consultation with the physical director.

CREDITS: Members of the practice and intercollegiate teams reporting regularly are excused from the regular physical educational classes and are entitled to full credit in that portion of their work. The individual grade rests largely on the basis of attendance, punctuality, earnestness and application.

INSTRUCTION IN PHYSICAL EXERCISE.

Course 1.—FRESHMAN YEAR. First semester. Three hours a week. One hour credit. This course is of a body-building nature. During the fall when the weather permits this course is carried on outdoors and consists for the most part of a study and practical application of outdoor games. Beginning about December first the work consists of the following:

(*a*) FREE CALISTHENICS: Exercises are selected for their different effects upon the bodily organism, and are arranged with the idea of progression. They involve hygienic or body-building work, educative movements and corrective or remedial exercises.

(*b*) LIGHT APPARATUS: Training is given in the use of Indian clubs, dumb-bells, wands, etc.

(*c*) HEAVY APPARATUS: Graded exercises are given on parallel bars, vaulting bars, horses, horizontal bars, traveling and flying rings, etc.

(*d*) INDOOR ATHLETICS AND GAMES. In this will be outlined indoor track meets, basket ball, indoor baseball, volley ball, etc.

Course 2.—FRESHMAN YEAR. Second semester. Three hours a week. One hour credit. This course is a continuation of course 1. Baseball, tennis and track and field athletics are given as soon as weather conditions permit outdoor work.

Courses 53 and 54.—PREREQUISITE, COURSES 1 AND 2 OR EQUIVALENT. Two hours a week. One hour credit. Different work each term throughout the year, based on the outlines of courses 1 and 2, but more advanced. Students in these courses are used as normal teachers with the model school children, thus deriving experience useful in teaching. Games and exercises suitable for graded schoolroom use are also emphasized.

Course 3.—THEORY OF PHYSICAL EDUCATION. First semester. Elective course. Two periods weekly. Two hours credit. This is a course in the essential factors of physical education. The following topics are studied: The physiology of exercise, the systems of physical education, the practice of physical education on playgrounds, in schools and colleges, the physical education of the blind, the deaf, and mental defectives. Each student will be especially trained on the following points: Nasal obstruction, abnormal sight and hearing, blood pressure, treatment of bad posture, and the efficiency tests.

Course 4.—PLAY AND PLAYGROUND METHODS. Second semester and summer term. Elective course. Three periods weekly. Two hours credit. Play equipment and management will be considered. Drawings, estimates and specifications for such play apparatus as can be made by high-school manual-training departments form a part of the work. A graded course of games, especially long base, playground ball, soccer, captain ball, volley ball, basket ball, will be thoroughly taught. The athletic badge competition, group athetics, and grade-school track meets form part of the instruction. A course for teachers who expect to do playground work in the graded school, or suprevisory work in the public schools.

Course 7.—COACHING METHODS. First and second semesters and summer session. Elective course. Three hours weekly. Three hours credit. This course is designed to meet the needs of men who will be required to coach football, basket ball, and track and field athletics in high schools and colleges. It deals with the essential fundamentals in each sport and systems of play and rules.

Course 8.—CONTINUATION OF COURSE 7 FOR ADVANCED STUDENTS. Elective course. Three hours weekly. Three hours credit.

Course 5.—SPECIALTIES. Elective course. No credit except for students in physical-education course. In this course an opportunity is given for instruction in baseball, tennis, and all physical-training specialties, such as boxing, wrestling and allied work.

Course 6.—TRAINING AND FIRST AID. Elective course. No credit except for students in physical-education course. Emergency treatment of common injuries. Theories of training, massage and treatment of sprains, bruises, etc.

Physical training for the Senior high school consists of indoor and outdoor gymnastics and games. See page 266.

Physical training for the Junior high school consists of gymnastic lessons, rhythmic exercises, plays and games. See page 266.

The Senior High School has a coach for football, basket ball and track athletics. Regular schedules in the above branches of athletics are arranged with the high schools in the Mineral Belt Athletic Association, of which Normal High is a member, and with high schools in the Kansas third district.

Public Speaking and Expression.

HAROLD F. SCHORY, Professor.

The work offered in this department is thoroughly educational and practical. The department takes the view that having something to say is not sufficient. A clear and accurate knowledge of how to transmit that something to the mind of the listener is a much more momentous problem. This the department seeks to accomplish by teaching the student how to frame his thought in such a manner that it will fall within the radius of the listener's experience and field of interest. The work is so handled that this principle is made as important to the teacher in presenting all of her subject matter as it is to the one who chooses to use it for the professional platform. All students in this department are required to become active members in the Normal Literary Society.

Course 1.—PUBLIC SPEAKING. Three hours credit. First semester. This course traces carefully the change from ancient to modern oratory. The course is principally concerned with a study of the forms of discourse. Much practice is given the student in the preparation and delivery of his own thought before an audience. In this course ability to think on your feet before an audience is gained in a very short time.

Course 2.—PUBLIC SPEAKING Three hours credit. Second semester. This course shifts its attention more to the content and purpose of the speech. The general ends of speech are taken up, together with a careful study of the principles leading to the attainment of the ends. These principles are made clear to the student through the preparation and delivery of his own thought before an audience. These principles are as sound and practical pedagogically as they are in the art of speech making.

Course 3.—FUNDAMENTALS OF ORAL EXPRESSION. Two hours credit. First semester. This course is intended to develop for the teacher a pleasing voice, clear, distinct utterance, and the acquisition of ability to express thoughts effectively in the classroom. Special attention is given to voice placing, deep breathing, resonance, flexibility, inflection, emphasis, quality and melody in speech.

Course 4.—EXPRESSION. Two hours credit. Second semester. The literature which can be vocally interpreted is found in certain discoverable forms, which by their very nature demand a certain manner of interpretation. It is the aim of this course to familiarize the student with these different forms and their interpretation. The course also deals with pantomime, training the student to understand and use an expressive body. The work is so conducted as to prove of practical value to the teacher, both in instructing and disciplining the mischievous child who expresses most of his ideas through subtle actions of the body.

Course 5.—INTERPRETATION Two hours credit. First semester. This course deals with the vocal interpretation of some of the best in literature, setting forth the principles of true interpretation; how to gain a glimpse of life, as set forth in the pages of the best literature, without intruding the individuality or opinions of the interpreter.

Course 6.—INTERPRETATION. Two hours credit. Second semester. This course is a continuation of Interpretation 5, and deals with more difficult literature.

Course 7.—ARGUMENTATION AND DEBATE. Two hours credit. First semester. This course is intended to provide mainly instruction and practice in the preparation and delivery of argumentative work. While the work conveniently takes the form of debates, it is not the object of the course merely to train debaters. The course seeks rather to develop the student's power of concentration, discernment and judgment, teaching him to discriminate in the world of ideas between the chaff and the wheat.

Course 8.—ARGUMENTATION AND DEBATE. Two hours credit. Second semester. This course is a continuation of course 7.

Course 51.—MASTERPIECES. Three hours credit. First semester. In this course some of the big masterpieces of literature are studied, giving special attention to the spiritual significance of the text. This course seeks to develop within the life of the student a realization of the impulses which have produced great literature. The Bible, and choice selections from epic, lyric, dramatic and oratorical literature are studied.

Course 52.—MASTERPIECES. Three hours credit. Second semester. A continuation of course 51.

ORGANIZATIONS.

NORMAL LITERARY SOCIETY.

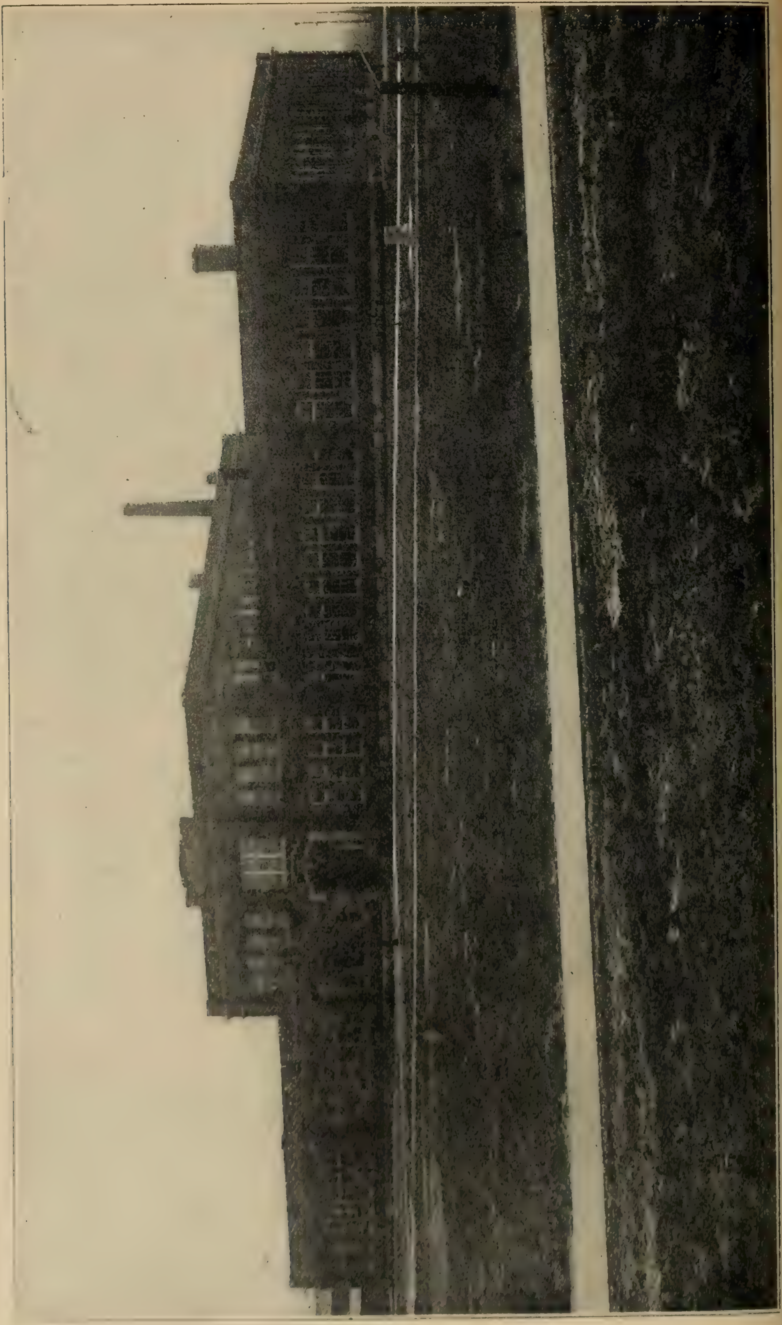
All students enrolled in the department of Public Speaking and Expression are required to become active members in the Normal Literary Society, and all others are cordially invited to enroll in the organization. The purpose of the society is to encourage all literary effort, and to afford an opportunity for the student, through practical experience before the public, to acquire ease and skill in the several forms of public utterance. The society meets twice a month, and at every meeting offers a splendid literary program consisting of oratory, music, readings, debates, short stories and the like. Every student, even though he is not enrolled in the Public Speaking department, is urged to join this thoroughly democratic organization. In addition to the literary training offered, the society furnishes frequent and splendid opportunities for the development of the social life of the student.

THE FORUM.

The Forum is a department of the Normal Literary Society and comprises all students taking the courses in argumentation and debate, together with any others interested in the same. Working in conjunction with the Literary Society, the Forum, after the principles of argumentation and debate are set forth by an instructor of public speaking, provides debates for the society, thereby making the application of principles learned to various live questions of the day. From this club our debate teams are chosen. The officers of the Forum, together with three members of the faculty appointed by the President of the institution, constitute the Oratorical Council, which has charge of all contests in debate and oratory.

DRAMATIC ART CLUB.

This organization is composed of students who are especially interested in dramatics, and furnishes an opportunity for the cultivation of the highest type of expression. The purpose of the organization, as set forth in the constitution, is "by systematic study, practice and experience, to familiarize ourselves more fully with the drama and the art of dramatic interpretation, and to establish a cordial friendship among those mutually interested in the same." Regular meetings of the club occur twice a month. A definite course of study is arranged each year, and at each regular meeting of the club a play is studied and discussed with special reference to its acting possibilities and dramatic technique. The club also produces the best professional plays in a truly professional manner. A cultured and refined atmosphere obtains at all meetings and banquets of the club, so that in addition to cultivating the histrionic art the Dramatic Art Club fills a real social need in the life of the student.



INDUSTRIAL AND PRACTICAL ARTS.

SECTION IV.

Industrial Arts.

The Faculty.

William A. Brandenburg, Ph. B., President.
A. H. Whitesitt, B. S., Professor of Industrial and Applied Arts.
F. H. Dickinson, Assistant Professor of Industrial Arts.
J. G. Wilkins, Instructor in Free-hand Drawing, and Wood Finishing.
Charles R. Wasser, Jr., Assistant Professor of Industrial Arts.
Vivian Atwood, B. S., Assistant Professor of Applied Arts.
O. B. Badger, Assistant Professor of Industrial Arts.
H. T. James, Machine Shop Instructor.
Ernest Hagler, Automobile Instructor.
Frank Deerwester, A. B., Pd. M., Pd. D., Associate Professor of Education.
Ermine Owen, M. A., Professor of English.
G. W. Weede, B. S., D. D. S., Director of Physical Education for Men.
J. A. G. Shirk, M. S., Professor of Mathematics and Applied Mechanics.
O. F. Grubbs, A. B., B. S., Associate Professor of History.
G. W. Trout, A. M., Professor of Sociology.
O. P. Dellinger, A. B., Ph. D., Professor of Biology.
George V. Emery, A. B., Associate Professor of Physical Sciences.
Lyle Brower, B. S., Professor of Drawing and Design.
D. M. Bowen, A. B., Professor of Education.
Edgar Nelson Mendenhall, Ph. B., Professor of Rural Education.
C. O. Van Dyke, M. A., Associate Professor of Mathematics.
C. W. Wright, A. B., Assistant Professor of Mathematics.
Paul J. Alyca, Assistant Director of Physical Education for Men.

Industrial and Applied Arts.

OUTLINE OF COURSES.

The figure immediately after the subject indicates the number of the course. The other figures indicate the number of semester-hours credit given for the course.

DEGREE COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work *	4	Shop Work	4
Drawing †	2	Drawing	2
Psychology 7	3	English 1	4
Physical Education 1	1	Physical Education 2	1
Electives	6	Electives	5
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Industrial Mathematics 7	3	Principles of Education 9	3
Organization and Administration of Industrial Arts 3	2	Teaching 1	3
Electives	4	Electives	3
	15		15

JUNIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Strength of Materials 16	2	English	4
Industrial History 51	3	Mechanism 17	2
Education	3	Electives	4
Electives	2		16
	16		

SENIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
History of Industrial and Vocational Education 51	3	Education	3
Industrial Physics	2	Industrial Physics	4
Economics 52	3	Sociology 58	3
Physical Education	1	Physical Education	1
Industrial Arts	2	Hygiene and Sanitation 18	1
Electives	4	Electives	3
	15		15

A student majoring in Industrial Arts may elect either woodwork or metal work as his departmental major, but should advise with the department before making a choice.

* Not less than 24 hours of actual shop work in the departmental major, nor less than 8 hours in the other material, is required for the degree.

† The drawing to be taken is determined by the shop course selected and is specified by the department.

LIFE CERTIFICATE COURSE.

Students who have attended the State Manual Training Normal School one semester, and who have completed three hours of professional work in addition to the requirements outlined below, are entitled to a Life Certificate for teaching in the grades, elementary two-year and Junior High Schools.

FRESHMAN YEAR.

First Semester:	hrs.	*Second Semester:*	hrs.
Shop Work *	4	Shop Work	4
Drawing †	2	Drawing	2
Psychology 7	3	English I	4
Physical Education I	1	Physical Education 2	1
Electives	6	Electives	5
	16		16

SOPHOMORE YEAR.

First Semester:	hrs.	*Second Semester:*	hrs.
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Industrial Mathematics	3	Principles of Education 9	3
Organization and Administration of Industrial Arts 7	2	Teaching I	3
Electives	4	Electives	3
	15		15

A student majoring in Industrial Arts may elect either wood work or metal work as his departmental major, but should advise with the department before making a choice.

* Not less than 16 hours of actual shop work in the departmental major is required for Life Certificate.

† The drawing to be taken is determined by the shop course selected and is specified by the department.

SPECIAL CERTIFICATE COURSES.

SPECIAL THREE-YEAR CERTIFICATE.

The Kansas legislature of 1915 gave the normal schools of Kansas the power to issue special certificates to teach manual training and other occupational subjects. In accordance with this act of the legislature, the faculty of this institution has provided special courses for those desiring to teach in the senior or four-year high schools. A special certificate will be issued authorizing them to teach such subject or subjects upon the completion of the following outlined course. This course must embrace the following: major subjects, 24; minor subjects, 12; education, 11; physical education, 2; electives, 13.

By minor is meant credit hours in subjects from any other department in which candidate is not necessarily specializing, but which he chooses as his second preference, such arrangement being made to accommodate those who may desire or be required to teach subjects outside of their department.

The choice of this minor should be made upon the advice of the head of the department in which the major is chosen.

In cases where candidates desire to be certificated to teach a minor subject or subjects, the twelve hours designated for such subjects may be considered elective, and may be chosen from any subjects in accordance with courses catalogued.

This special certificate in industrial arts will be issued for a period of three years, and may be renewed for a period of three years, provided thirty additional hours of college work has been completed, of which eight hours at least must have been selected from this department, and four hours in education. The special certificate may be renewed a second time only upon the completion of thirty additional hours of college work, which must be chosen to meet the course requirements of the major, and instead of a special certificate the candidate will then have completed his full college course, and will be issued the bachelor of science degree in education, which will authorize him to teach in any of the public schools of Kansas for life.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work *	6	Shop Work	6
Drawing †	2	Drawing	2
Psychology 7	3	English I	4
Physical Education 1	1	Physical Education 2	1
Electives	4	Electives	3
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	6	Shop Work	6
Drawing	2	Drawing	2
Industrial Mathematics	3	Principles of Education 9	3
Organization and Administration of Industrial Arts 7	2	Teaching 1	3
Electives	2	Electives	1
	15		15

A student majoring in Industrial Arts may elect either wood work or metal work as his departmental major, but should advise with the department before making a choice.

* Not less than 16 hours of actual shop work in the departmental major, nor less than 4 hours in the other material, is required for special Industrial Arts Certificate.

† The drawing to be taken is determined by the shop course selected and is specified by the department.

A. H. Whitesitt, Professor.
F. H. Dickinson, Assistant Professor.
C. R. Wasser, Assistant Professor.
O. B. Badger, Assistant Professor.
Vivian Atwood, Assistant Professor.
J. G. Wilkins, Instructor.
Ernest Hagler, Instructor.
H. T. James, Instructor.

The entry of America into the World War revealed the fact that our country is greatly in need of men and women skilled in technical and trade lines. It is a very satisfying fact that we met and solved the herculean industrial problems confronting us, and history will in due time acknowledge the great contribution that our technical institutions and departments made to this marvelous achievement. These institutions must not lose sight of the greater work that they are yet to do if they measure up to the aims and ideals set for them. The Industrial Arts Department of this institution is keeping pace with the aims and ideals imposed by these new world conditions.

We are living in a greatly changed world, socially and economically. It behooves each individual to conserve and utilize his time by acquiring that knowledge which will increase his hope as well as his salary, secure more economic independence, and fit him for greater and higher social service. This department is offering that opportunity by greatly intensifying its existing courses and by the addition of many new and vital ones. We have long held an enviable position in the industrial education field: first, because our institution was conceived in a spirit of service to our commonwealth, and has been unusually fortunate in having as its faculty men and women with this same unselfish desire to serve. This department is no less fortunate than the institution of which it is a part, for its faculty vies with all others in its efforts to give its greatest service to those whom it serves. This we would hold as our greatest asset. Second, ours is one of the best industrial arts buildings in the country. It is commodious, well lighted and sanitary, and is equipped second to none. This department is prepared to meet the new and greater demands.

SPECIAL PROFESSIONAL COURSES.

Course 1.—Observation and Practice Teaching Splendid opportunity obtains in conjunction with the Training School and High School departments to observe and teach classes under the usual school conditions. This course is required for all certificates and the degree. Three hours credit in Department of Education.

Course 2.—METHODS OF TEACHING INDUSTRIAL ARTS. A course contemporaneous with observation and practice teaching. It includes a study of the principles of teaching with reference to the industrial arts; methods of teaching, constructive criticism and typical lessons observed and resulting discussions. Lectures, reading and written work.

Course 3.—ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL ARTS. This course deals with the principles underlying the organization of shop courses. A study is made of the organization of some of the best industrial and vocational schools; relation of industrial arts to other school courses; administration and supervision of an industrial arts department; planning equipment; cost of equipment and maintenance of courses in elementary and secondary schools; specifications for equipment and supplies. Two hours credit in the Department of Education.

Course 51.—HISTORY OF INDUSTRIAL AND VOCATIONAL EDUCATION. The work of this course consists of lectures, readings and reports concerning the meaning and scope of industrial and vocational training, qualifications for teachers; early educational history; the beginning and development of manual training in the United States; the movement for the promotion of industrial education in the United States; legislation; work of trade, vocational and technical schools; sources of literature bearing on this phase of the public-school work. Three hours credit in Department of Education.

WOOD WORK.

Course 1.—BENCH WORK. A course which aims primarily to give training in the technical processes as a basis for teaching in the Junior High School. An effort is made to balance theory and practice. A portion of the time is given to demonstrations and lectures and discussions on methods of teaching and courses of study. Students prepare and present lessons and demonstrate tool processes as they would be given to a public-school class. Throughout the term outside reading is required on such subjects as tools and tool processes, principles of construction, fastenings—nails, screws, dowels and glue. Four hours credit.

Course 3.—ADVANCED BENCH WORK. This is a continuation of course 1, and is planned for those whose work in that course is not such as to justify admission to the course in furniture and cabinetmaking. The number taking this course will be few, and greater opportunity will obtain for a more intensive study of individual needs. A reasonable latitude will be given the individual student in the selection of projects so long as the project involves the principles being taught. Four hours credit.

Course 5.—WOOD TURNING. Consists of instruction in the care of the lathe and tools, and in making a series of exercise pieces which give familiarity with the principles involved in roughing and turning cylinders square ends, tapes, square corners, "V" cuts, beads and coves; and in faceplates, chuck and mandrel work. Correct grinding and honing of cutting tools is taught. Each piece of work introduces a new tool process, and a careful study is made of the relation between the tool and the revolving wood, so that a student understands the reason for handling a tool in a particular way for each cut. Each exercise will be followed by a practical application of the principle learned. Prerequisite, course 1. Four hours credit.

Course 7.—ADVANCED WOOD TURNING. A course designed for those who may desire to master some of the more difficult problems in turning. Some simple work is given, but the work is chiefly face plate and chuck work, in which problems are given involving accurate fitting of parts, such as boxes and mirror frames. Built-up and inlay work also receives attention. Instruction and practice in finishing—staining, dyeing and polishing—receives a large place in this course. Prerequisite, course 5. Four hours credit.

Course 9.—FURNITURE AND CABINETMAKING. A course devoted largely to teaching the principles, the use and care of the tools and machines with which the cabinetmaker works. Emphasis is placed upon the construction of period furniture with modern adaptations, including caning, upholstering with leather, tapestry, etc.; inlaying and veneering—both flat and curved. This is a course restricted to those with a high degree of manipulative skill and a keen appreciation of good design. Prerequisite, courses 1 and 5. Four hours credit.

Course 11.—ELEMENTARY WOOD WORK. This is a beginners' course, and planned chiefly for teachers in town and rural schools. It consists of instruction in the use and care of the simple hand tools and principles of simple construction. Enough drawing is taught to familiarize the student with the elementary principles underlying the production of a working drawing, and enable the worker to readily read blue prints and other drawings. Some study is also made of the common kinds of woods and of simple methods of finishing, as staining, shellacking and waxing. Two hours credit.

Course 13.—VENEERING AND INLAYING. This will be a complete course, and will familiarize the student with the process of veneering from the standpoint of utility as well as the more artistic phase of the work. All teachers of wood work, and others experienced in the handling of woodworking tools, will find this course very useful and interesting. The work will include the study of materials, the selection and treatment of the different kinds of veneers; the use (possibilities and limitations) of variour glues—animal, vegetable and waterproof; the preparation of materials, involving matching, jointing and taping of veneers; treatment of core and cauls; the rubbing method and application by pressure to curved or plane surfaces; inlaying of lines, borders and inserts, with the possibility of making and laying some simple decorative pieces of marquetry; the handling and further preparation of veneered surfaces for finishing. The old and new methods of laying veneers will be practiced or demonstrated. All work will be practical in its nature, suggestive and helpful to any one who wishes to make use of veneering in his school. The theory will be practiced on small objects, such as plain and fancy panels, checkerboards, picture frames, tray bottoms, lap boards, sewing or other small boxes, and clock frames. Two hours credit.

Course 15.—ELEMENTARY WOOD FINISHING. Includes the finishing of a series of small panels of different kinds of woods; a study of different kinds of stains, each in relation to the character of the wood, its formula and its application; the relative values of oil, shellac, wax and varnish under varying conditions. Care and upkeep of the finishing room; care and use of brushes, cups, pails, and rubbing materials. The latter part of the term's work will be given to the finishing of small projects. Four hours credit.

Course 17.—HOME MECHANICS. This course is designed to meet the growing demand for teachers who can vitalize their work and make it supply the community needs. About two-thirds of the time is given to the construction of the plain, simple projects and structures used in and about the home, such as benches, step-ladders, poultry appliances, concrete forms, poultry houses, garages, etc. Enough time will be taken to acquaint the student with the possibilities and use of concrete in the making of posts, troughs, etc. The remainder of the term is devoted to forging and includes the making and repairing of the simple things used around the home. Prerequisite, Course 1. Four hours credit.

Course 19.—Pattern Making. Provides a thorough training in the reading of shop drawings, and their interpretation in the form of completed patterns. The student is taught the meaning and necessity of draft, the use of core prints, and making of core boxes; shrinkage of iron and other metals; its effect on different shapes and thicknesses of castings; how to join lumber to prevent warping and shrinkage of patterns; the use of segmental work; the meaning of such terms as fillet, boss, flange, rib, web, etc. Lectures and demonstrations will occur at frequent intervals. Finishing will receive its proper attention. All of the patterns made will be molded by the student making them, and any errors will thus be brought to the attention of the particular student. A study will be made of all the interests involved in the foundry of each pattern. Four hours credit.

Course 21.—Mill Work. This course emphasizes the practical work of power machinery. The shop is equipped with universal saws, band saws, jointers, planers, mortisers, shaper, tenoner, belt-sander and gluing facilities. The practical work includes cutting of stock for construction in mill-work problems, such as work benches, science tables, chairs, desks, book cases, doors and screens. The shop is organized as a producing factory in which economy of production is the dominant feature. A course open only to those of proven ability. Prerequisite, courses 1 and 9. Four hours credit.

Course 23.—Technology of Woodworking. A study of the structures and properties of wood; characteristics and distribution of the common species; the growth and care of woods in the forest; source of supply and markets; lumbering, sawmilling; woodworking tools; fastenings—common joints, nails, screws, bolts, cabinet hardware; glue—kind, strength, manufacture. Prerequisite, courses 1 and 9. Two hours credit.

Course 25.—Saw Filing and Care of Machinery. A study of saw filing, including filing, setting, swedging and gumming of different kinds of saws; makes as to characteristics and quality; files—kinds and use; knife tool sharpening and adjusting; woodworking machines—manufacturers' power and power transmission, speeds, bearings, care and repair; shop planning and installation of machinery. Prerequisite, course 1. Two hours credit.

Course 55.—Carpentry. This course is planned to give the student a practical working knowledge of house construction. The construction work consist of the actual construction of a house on a permanent site, or a section of a house in the shop, the students placing and leveling sills and floor joists, erecting walls, plumbing walls, cutting and placing common, hip and valley and jack rafters; framing porch, etc. The square being used to frame all work, it is essential that every workman should have a thorough and practical knowledge of its capabilities and applications, and this course is to aid in acquiring that knowledge. Enough outside finish, such as cornice work, shingling, setting frames, siding, and porch finish, is given to acquaint the student with the best methods of commercial practice. Additional practice offered in cutting and placing jambs, fitting and hanging doors and sash, inside finish, fitting hardware, laying and scraping floors. Especial emphasis is placed upon stair work, laying out, cutting and placing rough stringers for steps; mode of laying out ordinary straight stairs; laying out winders; finishing with risers, treads and skirt boards; method of laying out and working hand-rails for quarter-turn and winding stairways. Prerequisite, courses 1, 5, 19, 21. Four hours credit.

Course 57.—ADVANCED PATTERN MAKING. Students who have completed elementary pattern making, or who have had commercial practice, may take up the work of this course. The aim is to assign patterns that will supply the individual needs of the student as far as possible. Patterns for complete machines, such as lathe, drill press, gas engine, etc., make up the work of the course. Four hours credit.

Course 59.—ADVANCED WOOD FINISHING. A course designed to meet the demand for a more exhaustive knowledge of the subject than course 13 affords. It deals chiefly with French polishing, varnishing and rubbing. It includes correct preparation of surfaces for securing best results; making and correct use of polishing pad, formulas for polish and their application. The application and treatment of varnish is one of the "tricks of the trade." A knowledge of the trick may be had here in the finishing of new and the refinishing of old pieces of furniture. Work also given in interior house finish. A practical and valuable course for either industrial arts teachers or those working at the trade. Prerequisite, course 13. Four hours credit.

CONCRETE WORK.

Course 1.—CONCRETE. The course is designed to meet both the needs of the rural and city schools. It is a study of the history and development of cement, concrete aggregates and cement, form building of wire, wood and plaster of Paris, reinforcing and finishing. The projects are such as can be made in any school, and consist of sidewalks, posts, "V" and semicircular-shaped troughs, flower boxes, garden seats, urns, vases, dog kennels, etc. Prerequisite, course 1 in woodwork. Two or four hours credit.

PRINTING.

Experience has shown that printing can be made a vital force in the teaching of English. This concrete application of the rules of good English fixes them in the pupil's mind in such a way that he seldom forgets their use.

Printing being the fifth industry in the United States in the number of people engaged, the public schools are justified, if not under obligation, to make provision whereby every boy may learn something of this great industry. Its value as a prevocational as well as a vocational subject has been proven.

Course 1. Takes up the elements of printing, such as the study of type, printer's measure, type cases, proof reading, the press, etc. Mechanical operations are emphasized. Practical work is given in general typesetting and operating the press. Four hours credit.

Course 2. This is a continuation of course 1, in which design is emphasized. Practical work is offered in color printing, selection of paper stock, composition of letterheads, envelope forms, business cards, programs, and books, and the making of wood cuts. Throughout the course there will be discussions on what to print in our public schools and how to proceed. Prerequisite, course 1. Four hours credit.

INDUSTRIAL ARTS DRAWING.

Course 1.—FREEHAND SKETCHING. A course designed to develop ability to "see" an object and to give adequate, accurate and rapid expression by means of pencil and blackboard perspective. Two hours credit.

Course 2.—ELEMENTARY MECHANICAL DRAWING. Proficiency in the use of drafting instruments, knowledge of the conventions and methods of drafting-room practice, an understanding of projection and working drawings through the making of a series of working drawings. Lettering exercises, both capitals and lower case. Directions for sharpening the pencil and laying out the sheet. Line conventions; use and care of the ruling pen. Geometrical constructions include lines, angles, polygons, circles and tangents. Orthographic projection study of first and third angle. Projection of line, point and solids on planes. Each problem begins with the making of a sketch in pencil and then a penciled working drawing, followed by an inked tracing and a blue print.

The importance of good workmanship is emphasized throughout the course and good technique is required. Two hours credit.

Course 3.—PROJECTION DRAWING. Analytical study of orthographic projection of line, points and solids. Fundamentals of projection are emphasized in problems dealing with revolutions, sections, intersections and surface developments—pattern development suitable for use in sheet-metal work.

A study of pictorial projects such as isometric, oblique or Cavalier and Cabinet projection. Prerequisite, course 2. Two hours credit.

Course 4.—FURNITURE DESIGN. The dominating purpose throughout this course is to stimulate in the student a conception of furniture as an expression of beauty. The course consists of a series of problems from the design of simple chairs and tables to more complex types of furniture. Emphasis is placed upon the development of types with modern adaptations. Rendering in colors is a feature. Prerequisite, courses 1*a* and 1*b*. Two hours credit.

Course 5.—ELEMENTARY MACHINE DRAWING. A study of standard bolts, nuts, screws, keys and pins with their standard conventions. Use of tables and machinist and engineer hand books. Drawing of machine parts such as hand wheels, eccentric sheave, engine crank, connecting rod end, crane hook, clutch coupling, piston rod, stuffing box, etc. Execution of working sketch of casting on regular cross-section paper, followed by working drawing, tracing and blue print.

Study of cam motions and simple elementary gearing. Prerequisite courses 2 and 3. Two hours credit.

Course 6.—ADVANCED MACHINE DRAWING. A course planned to meet the needs of those who teach in the more advanced high schools and those who may wish to engage in commercial shop drafting. The course deals largely with the theory applied in practical work in the transmission of power by means of belt and rope drives, cams and crank motions, gears—spur, rack and pinion, worm gear, internal gear; graphics, and the design of special apparatus. Prerequisite, courses 3 and 4. Two hours credit.

Course 51.—MACHINE DESIGN Problems in machine design. The application of equations of formulas to problems under construction, with a study of the materials used. Calculation of stresses and strains in the design of engines, etc. Sketching and drafting intricate machinery, with assembled and detailed drawings. Bill of materials, tracing and blueprinting. Prerequisite, course 50. Two hours credit.

Course 7.—AUTOMOBILE DRAWING. This is an intensive course, planned especially for automobile mechanics, giving drill in free-hand sketching, the use of drawing instruments and practice in reading charts and blue prints. The automobile is the source from which all practice is derived. The aim is to give the mechanic the greatest amount of work in the least time, which bears directly upon his major work. Two hours credit.

Course 8.—PLUMBING TRADE DRAFTING. A course planned for those following the plumbing trade and aiming at familiarizing the student with those architectural drafting conventions that are necessary in the plumbers' trade. The course includes the making of floor and wall framing plans; details of wall construction; floor plans, showing location of plumbing fixtures; basement plan, showing location of sewer outlet; a vertical section of house, showing drain and stacks, heating boiler, mains and risers. Details of fixtures and all necessary connections are shown. Prerequisite, course 1. Two hours credit.

Course 9.—Sheet-metal Trade Drafting. Drawing forms a very important part in a sheet-metal course. Preceding the making of a pattern for any problem in sheet-metal work, a working drawing of the article must be made. The work consists essentially of the development of full-sized detail drawings; in order that the student may understand the operations involved in developing the surfaces of a solid, a knowledge of geometrical and projection drawing is necessary; hence the student must be familiar with the principles involved in courses 1 and 3. Two hours credit.

Course 10.—Applied Design. A study of the principles underlying good design—line and space composition, rhythm, proportion, and color harmonies. Special problems for those taking work in the arts and crafts, printing, etc. Two hours credit.

Course 55.—Descriptive Geometry. A course intended chiefly for those who desire to specialize in mechanical drafting. Solutions of problems relating to point, line and surface, with intersections and developments and their application to practical shop problems. Two hours credit.

METAL WORK.

Course 2.—Elementary Forging. This course includes the construction of different kinds of forges, care of the fire, selection of coal and the making of coke; proper use of tools; heats for the working of different materials; exercises in drawing out and upsetting; the making of welds; practice in bending and forming, fullering and swaging, drilling and riveting, heading and thread cutting. Four hours credit.

Course 4.—Farm Forging. A course designed to serve the farm community in the care and repair of farm machinery. It includes instruction in building and care of the fire, the correct use of hammer, tongs and anvil tools; the making of simple forgings, as bolts, hooks and clevises; the sharpening and tempering of plowshares, cultivator teeth, etc. Helpful suggestions and advice concerning the equipment for a farm shop. Two hours credit.

Course 6.—Automobile Forging. This is a special course for those students who are specializing in automobile work. It is a brief course dealing with the elements of forging and the making of such tools as are needed for garage work. Two hours credit.

Course 8.—Art Smithing and Ornamental Forging of Andirons, Fire Sets, Lanterns, Lamps, Candlesticks. Designs are worked out in design department. To be admitted to this course students must show ability and adaptability to do this work. Prerequisite, course 1. Four hours credit.

Course 10.—Bench and Elementary Machine Shop Practice. This course is planned to give the student the correct idea as to the use of hand and small machine tools, the theoretical and practical work for the beginner. It consists of a series of exercises on the bench, such as chipping, filing to fit, laying out, centering and machine drilling, scraping to a surface, tapping and threading with hand dies. From bench work the student receives a good insight as to the work done on the machine. Elementary work on the machine consists of taking of notes relative to the working speeds and feeds of machine in different metals, also the grinding of drills and tools for several metals to get the best results from these grindings. The practical part of this course is the use of all lathes, planers, shapers, drill presses, saws and plain milling machine work. In lathe work we do straight cylindrical taper turning, and boring, shouldering, parting, chuck work; the cutting of single, V and U. S. standard threads; hand-turning and knurling. Planer and shaper work consists of straight, angle and oval cutting, key-seating and slotting. In milling work we do plain-end, face and straddle milling, slotting, sawing and key-seating. Prerequisite, course 2. Four hours credit.

Course 12.—GENERAL MACHINE SHOP PRACTICE. This course is a continuation of course 10, designed for the student's use in machine construction, millwrighting and general repair work. Machine construction is the making of small machinery, instruments and tools, the cutting of multiple threads on the lathe; also square, worn and acme threads; the use of the universal milling and grinding machines, such as using the dividing head, plain and different indexing, vertical milling and slotting; making spur, spiral, bevel and worm gears, and plain and cylindrical grinding on the grinder. Prerequisite, course 10. Four hours credit.

Course 50.—TOOL AND DIE MAKING. Tool and die making is more advanced work in shop practice. In this course mathematics plays an important part. The practical part consists of the making, annealing, hardening and tempering of all milling machine tools or cutters and of the hand tools, such as mandrels, taps, dies, reamers, drills and all necessary small tools. Internal grinding is also given, and the making of jigs. Die making consists of the making, annealing, tempering, etc., of dies and punches for practical use on our punch press. Prerequisite, courses 10 and 12. Four hours credit.

Course 14.—SHEET METAL. An elementary course involving simple problems which give practice in the processes of cutting, wiring, grooving, riveting, seaming, forming, edging, filing and soldering. The tool and machine processes used in the construction of these problems is the basis of the mechanical part of the sheet-metal trade. Four hours credit.

Course 16.—FOUNDRY. Lectures are given on the following: Foundry terms, tools and flasks, molding sand, green sand molding, facing, core sand and mixtures, binders and cores, metals and pressure in molds, core ovens, fluxes, and their uses, brass furnaces, etc. Demonstrations of molding: green and dry sand molding and loam work, ramming, venting, parting, gateing and other practical processes. Molding practice: cutting and tempering of sand, two and three-part and check-flask work, bedding in, sweep work and open-sand molding. Core making: mixing core sand, making, baking and setting cores. Use of brass furnace: firing, melting, mixing, skimming and pouring nonferrous metals. Cupola practice: lining, making bottom and breast, drying, firing, charging, mixing metals and melting, pouring, skimming and chipping castings. Four hours credit.

ARTS AND CRAFTS.

Course 1.—ART LEATHER. This craft presents unlimited possibilities and the work possesses the charm of variety that is given to original design. The processes of tooling, modeling and coloring will be taught in executing designs on useful articles. Two or four hours credit.

Course 2.—ART METAL. This craft affords an opportunity for individual expression in copper and brass. In the making of trays, desk sets, bowls, etc., students will acquire a knowledge of the basic principles and processes. Two hours credit.

Course 3.—JEWELRY. This course carries the student through the elementary steps of saw-piercing, etching, soldering and stone-setting. Open only to those who have had art metal. Two or four hours credit.

Course 4.—ELEMENTARY BASKETRY. Making of simple pieces in reed and raffia, in which design is an important feature. Two hours credit.

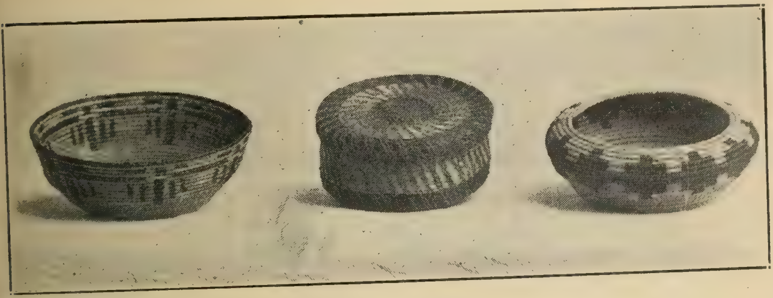
Course 5.—ADVANCED BASKETRY. Advanced problems in reed and raffia, and pine needle and Japanese matting baskets. Prerequisite, course 3. Two hours credit.

Course 6.—BOOKBINDING. Includes simple problems in portfolio, notebooks, blank books, the binding of magazines and the mending and rebinding of books. Two or four hours credit.

Course 7.—ELEMENTARY CLAY WORK. This course involves the making of tiles, bowls, vases, etc., by building piece upon piece, also modeling in mass. Two hours credit.

Course 8.—ADVANCED POTTERY. In this course pieces are made by throwing or casting. Practical experience is given in glazing and firing. Open only to those who have had elementary pottery. Two or four hours credit.

Course 9.—WOOD CARVING. Work in both soft and hard woods. Historic units and strap work are used in the carving of tie racks, hand mirrors, chair backs, etc. Original designs in relief, round and incised work. Two or four hours credit.



SEWED BASKETRY.

TRADE COURSES.

These courses are maintained for the purpose of instructing young men in the practice and fundamental principles of manufacturing and building trades. The once prevalent apprentice system whereby boys were bound out to an employer for a term of years, has almost disappeared. In what remains of the apprenticeship systems, the tendency now is, with few exceptions, to train a boy to be a specialist upon one class of work. The first-class, all-round, skilled workman of our country is becoming very rare. The invention and use of automatic machinery which boys are now taught to operate, and the wage which is paid to these boys as operators, are often more than those paid to beginning apprentices; hence most young men prefer to become mere operators of one or a few machines instead of being taught a trade which will give them ability to make the very machines which they control. Employers also are no longer willing to assume the responsibility of teaching trades to boys.

They realize the difficulty of securing high-class skilled labor as the present-day shops are organized. The value of any workman to his employer depends upon his experience and his ability and willingness to apply that experience. Experience is valuable according to its composition. It should be composed of both practice and theory. By practice a workman attains skill and speed; by a study of theory he learns why each step is taken. The need for thorough and systematic instruction in the theory and practice of the trades being generally conceded, employers and employees alike are coming to recognize that a properly conducted trade school can and does offer a better preparation for industrial efficiency than can be obtained by working at a trade commercially. It has been shown that a boy can, by close application to work under competent instructors, learn more and learn in a better way in one-half the time required in a commercial shop.

It is not the claim of this school to turn out journeymen mechanics, but it does claim to instruct its students thoroughly and systematically in the shortest time possible in the fundamental principles and in the practice of the trade being learned, so that a student, upon graduation, possesses ability and sufficient confidence in himself as will be of immediate practical value to his employer, and he receives a fair and just remuneration at once. Students completing their course should be at least on a par with the apprentice who has served four years under commercial shop conditions.

INSTRUCTORS AND INSTRUCTION.

In every case the instructors are men of practical experience and skill, fully competent to teach the best modern methods and theory.

The scheme of instruction provides for extensive practice with the tools of the trades offered, for such instruction in drawing, mathematics, applied science, and trade theory as may be necessary to enable the students to read blue prints, make calculations, and understand in a general way the natural laws governing their work.

All regular students in the day school are required to attend classes in the supplementary subjects, and those in the evening classes are advised to if the need seems to justify it.

QUALIFICATIONS FOR ADMISSION.

The regular day school is open to men and to boys over fourteen years of age. Persons over sixteen years of age who are regularly employed during the day are permitted to enroll in the evening classes. The term "evening school work" is considered to mean school work given to persons at hours other than those of actual employment. The term is descriptive of the kind of work rather than of the particular time of day when the class is in session. Persons working in the night shifts can be taught in classes held in the morning or afternoon and be regarded as evening instruction.

LENGTH OF COURSE.

The work as planned covers a period of two years. The instruction is almost wholly individual, and a student's progress depends almost entirely upon his previous education and experience, his aptitude for the trade he has chosen, and his diligence. The school aims primarily at thoroughness, and students are required to follow courses as outlined. The only exception to this rule will be made in the case of mature students who have already made a beginning at their trades before entering the school and who can remain for only a part of the year.

ATTENDANCE.

It is taken for granted that every student will attend regularly and work diligently, for only by being present and working diligently can one expect to accomplish the work laid out in any given course.

Any student who because of circumstances unavoidable is obliged to withdraw before a course is completed will receive credit for work satisfactorily done.

CERTIFICATES OF GRADUATION.

Each student, when he has completed the prescribed work in his course, will be given a certificate of graduation. Those who are compelled to leave the school before completing the prescribed course will, upon request, receive a statement of the work completed while in attendance.

THE TRADES OFFERED.

Machinist and Tool Making.
Pattern Making.
Automobile Work.
Carpentry.

Machine Shop.

The instructions in this course of machine-shop practice provide for the thorough training of the student who wishes to become a competent, all-round machinist.

This course consists of shop work and instructions in a practical way. Students work from drawings and blue prints.

FIRST YEAR.

First Term. Drill-press work. Simple forging. Use of all common tools and their construction. Laying out, drilling, chipping, filing, tapping and threading with taps and dies. The proper use of all measuring instruments.

Second Term. Tool dressing and tempering, shaper, planer, lathe and milling machine work.

Third Term. Elementary tool grinding and a continuation of Nos. 1 and 2 of various kinds of machine work. Leveling and aligning of different kinds of machine equipments.

SECOND YEAR.

First Term. Work on drill press, shaper and planer. Advanced lathe work, including centering up, chucking, faceplate work, turning and boring straight and taper. Size and form turning, milling machine work, end, slab and gang milling.

Second Term. Vertical and horizontal shaping and planing work. Use of grinding machine on external and internal work, straight and angular. Floor work, compound and differential indexing, spiral cutting, etc.

Third Term. Review of all machine and bench work. Tool making and milling-machine work.

Instruction throughout the course in forge work, hardening and tempering. Care of belts, machine-shop material, emery wheels, threads and methods. Grinding and classification of steel. Design and use of gigs, punches and dies.

APPLIED MATHEMATICS.

Course 1.—Mathematics for Machinists. Review of fundamental operations of arithmetic, common and decimal fractions, powers and roots, percentage, measures and weights, pulleys and belting, tooth gearing, elementary mechanics. The use of simple equation and algebraic formulæ; fundamental concepts of geometry; centers of gravity; triangle and parallelogram of forces; stresses and strains; angle measurements; trigonometry of the right triangle and its applications to shapes of threads, taper turning, and work on the milling machine. A study of machine motions.

Machine Drawing.

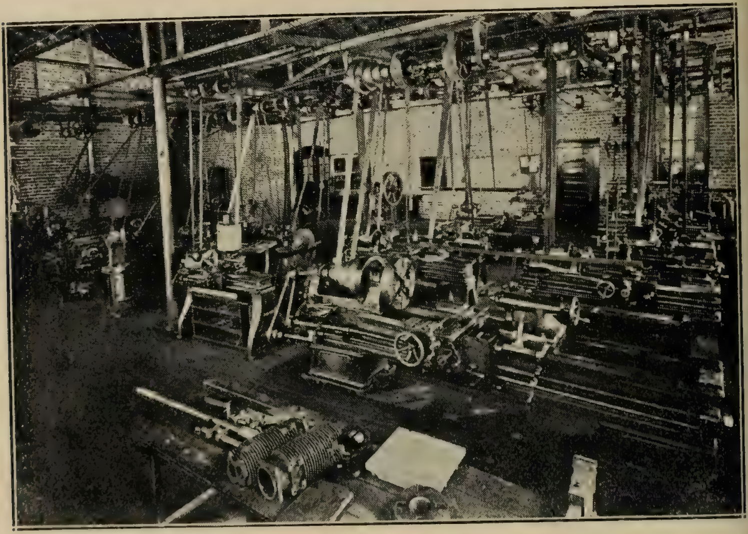
Chas. R. Wasser, Instructor.

FIRST YEAR.

First Term. Use and care of drawing instruments. Free-hand lettering and use of standard letters. Exercise work in use of drawing instruments, such as triangles, T-square, etc. Simple projections.

Second Term. Projections and revolution of solids. Free-hand sketching. Use of cross-section paper. Simple drawing of machine parts. Study of materials as related to cross-hatching.

Third Term. Geometrical problems in relation to trades, their application to shopman and draftsman. Threads, bolts, nuts, and hand-wheel details, etc.



Machine Shop.

SECOND YEAR.

First Term. Advanced conventions. Tracing and blue-printing. Measuring, sketching and carrying to completion machine parts, such as bearings, pulleys, simple gears, hand wheels, vises and gas-engine parts.

Second Term. Drawing related to direct shop work, such as making complete drawing with all details. Woodworking machines. Drill-press or speed lathe.

Third Term. Gearing—involute and cycloidal. Cams and motions. Making assembly drawings from details. Elementary design work. Use of handbooks, etc.

Pattern Making.

This course is designed for those who may wish to begin at the beginning, and for those who already know something about the trade and who wish to take up advanced types of work. The instruction throughout emphasizes the relation between pattern shop and foundry. Students work from drawings and blue prints throughout.

FIRST YEAR.

First Term. Care and use of bench tools, such as saws, planes, chisels, squares, boring tools, clamping devices, fasteners, etc. Molding of simple patterns. Demonstrations showing results of back draft, tight dowel pins, and tight dovetail loose pieces. Core making.

Second Term. Materials. Kinds and special qualities of woods used for successful patterns. Metals and their characteristics. Simple patterns. Wood turning; use of lathe, spindle turning, faceplate and chucking processes.

Third Term. Laying out patterns. Segment work. Hand wheels, and general pattern work combining lathe and bench work. Lectures on core work and general foundry practice.

SECOND YEAR.

First Term. Built-up patterns, including choice and preparation of stock. Pipe and cylinder body, and pulley patterns.

Second Term. Spur, bevel, and worm gearing.

Third Term. Construction of patterns for complete machine.

MATHEMATICS. Special instruction in calculation of tapers, screws, pitch of bevel, worm, and spiral gears; laying out involute and epicycloidal teeth; screw propellers; shop algebra and trigonometry applicable to laying out work and setting machinery.

APPLIED MATHEMATICS.

Course 1.—MATHEMATICS FOR PATTERN MAKERS. Review of fundamental operations of arithmetic, common and decimal fractions, powers and roots, percentage, measures and weights, pulleys and belting, tooth gearing, elementary mechanics. The use of the simple equation and algebraic formulæ, fundamental concept of geometry, centers of gravity, triangle and parallelogram of forces, stresses and strains, angle measurements, trigonometry of the right triangle and its applications to shapes of threads, taper turning, and work on the milling machine. A study of machine motions.

Automobile Work.

The courses in automobile work have been arranged to give the student a thorough grounding in the principles of the auto gas engines. A combination of theory and practice, that each may supplement and aid the other, is the plan. This course will enable the student to operate the automobile economically; to adjust carburetors, grind valves, and make general repairs. It will teach him the function of differentials, timing, ignition, tension magnetos, batteries and different wiring systems for lighting and self-starters.

The instruction is given by means of lectures, blackboard sketches, charts, etc., supplemented by constant reference to the parts of the auto which are before the student, after which he tears down machines, makes repairs, and then assembles, under the close supervision and inspection of instructors who are experts in their line. No machine is permitted to leave our shops before it has passed the inspection of the director in charge of our automobile department.

Our courses are so arranged that we can take care of two groups of students—those who may wish only a short and more or less cursory study of the automobile in order to be able to operate their own cars, economically, and those who wish a very comprehensive knowledge—who wish to make this work their vocation. Classes are arranged for each group in both day and evening school.

Course 1.—ELEMENTARY AUTO MECHANICS. A course replete with assembly and disassembly of automobile parts, the purpose of which is to familiarize the student with the various working parts—names, functions, and their relations; some knowledge of electrical terms, principles of magnetism and induction as applied to the automobile. The course consists of lectures, demonstrations, and shop work.

Course 2.—FORGING. A course especially for automobile students, involving the simple elements of forging and the making of such tools as is often convenient and economical for the garage worker to be able to do; also for the repairs for cars being overhauled in the shop.

Course 3.—AUTOMOBILE DRAWING. A course planned especially for automobile students, giving drill in free-hand sketching and practice in reading blue prints, charts and sketches. The automobile is the chief source from which all practice is derived.

Course 4.—ELEMENTARY MACHINE SHOP. A course designed to familiarize the student with the elementary principles of machine-shop practice, which includes chipping, filing to fit, machine drilling, tapping and threading with hand dies, and straight cylindrical and taper turning, shouldering, and chuck work; the cutting of single V and U. S. standard threads. Planer and shaper work in straight angle and oval cutting, key seating and slotting.

Course 5.—ADVANCED MACHINE SHOP. A continuation of course 4, designed for the student's use in machine construction and general repair work. The use of the universal milling and grinding machines; the making of spur, spiral, bevel and worn gears, and plain and cylindrical grinding. Prerequisite, course 4.

Course 6.—BRAZING AND OXYACETYLINE WELDING. A course which gives practice in simple soldering and brazing, repairing of radiators, and the use of oxyacetyline torch for cutting and welding of automobile castings.

Course 7.—ADVANCED AUTO MECHANICS. A course in which a more detailed study is made of the automobile, such as frames, springs, axles and wheels, transmissions, clutches, differentials, motors, etc., trouble hunting and repair work, valve grinding, carbon burning, and testing of motors. This is a very comprehensive course and should be preceded by course 1.

Carpentry and Woodworking.

The work offered in this trade consists of instruction in carpentry, joinery, cabinetmaking, stair building, and mill work. Students work from drawings and blue prints throughout, and the aim is to give a thorough foundation in all the fundamental processes of woodworking. Early in the course opportunity is given the student to specialize in those branches of the trade that are of most value to him.

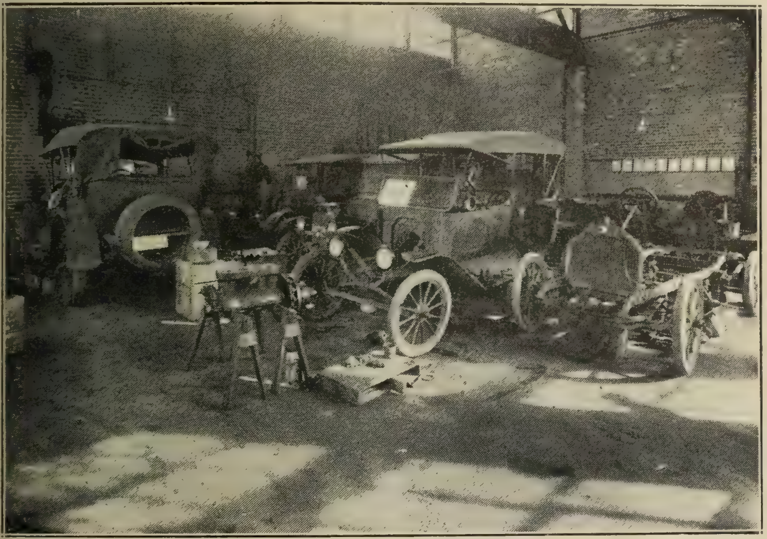
SHOP WORK.

FIRST YEAR.

First Term. Includes a study of tools—as uses, names of parts, adjustments, their care, and how to sharpen; the making of a few important joints, as lap mortise and tenon, gaining and dovetailing, and their application in making useful projects.

Second Term. A study of materials and fastenings—nails, screws, bolts, stirrups, etc. Practical use of joinery exercises in framing sills, plates, girders and ties, and fitting braces. Work on the various woodworking machines. Tool grinding. Setting up machines.

Third Term. Making window and door frames, porch and cornice work; exterior decoration; making and setting forms for reinforced concrete construction.



AUTOMOBILE MECHANICS.

SECOND YEAR.

First Term. Balloon framing, timber framing, rafter framing, truss framing, laying joist, framing headers, etc. Setting of partitions, etc.

Second Term. Interior finish, such as jamb casing, baseboarding, mode of laying out ordinary straight stairs. Laying out winders. Kerfing stringers. Laminating stringers, risers and other bent work. Method of laying out and working hand railing for platform, quarter turn and winding stairways. Fitting and hanging doors and windows. Putting on hardware.

Third Term. Erecting buildings and full-sized sections of buildings in the school shop.

Lectures. During the entire course occasional lectures are given on such subjects as the following: Care of edged tools. The various woods used in building. Glue, nails, screws, bolts, pins, straps, and other fastenings. Setting up the various woodworking machines, their use and care. The steel square. Various building ordinances.

The mathematics emphasizes measurements of lumber, and cubic contents and geometrical problems involved in roof framing, stair building, and the use of the steel square. Estimates.

Course 2.—MATHEMATICS FOR CARPENTERS. Review of fundamental operations of arithmetic, common and decimal fractions, powers and roots, percentage, measures and weights; forces in structures; fundamental concepts of geometry; angle measurements; trigonometry of the right triangle as applied to framed structures; estimating costs; and uses of the steel square.

The drafting accompanying the carpentry courses covers: Use of drafting instruments, lettering and sketching, orthographic projection. Details of simple cabinet work, window and door frames, sash and interior finish. Working drawings, consisting of scale plans, elevations and sections of houses. Tracing and blue-printing.

CLASS IN CARPENTRY.

Carpentry Drawing.

FIRST YEAR.

First Term. Use of drawing materials, sketches of simple projections, free-hand lettering—use of architectural lettering, sketches of house plans. Framing details—sills, joists, studs, corner posts, rafter ends, etc. Window and door detail.

Second Term. Sketches of plan for small cottage. Detail framing plan for cottage. Plan of cottage to ¼" scale. Framing plans for elevations. Tracing and blue-printing. Materials and quantities.

Third Term. Sketches for plan of two-story house. Stair layout and stair detail. Framing plans and elevations. Elevations of exterior. Cost

SECOND YEAR.

First Term. Original plan for residence. Study of arrangement of rooms. Locations of fixtures in kitchen and bathroom. Heating and lighting. Sanitation.

Second Term. Elevations for original design for residence. Tracing and blue-printing of architectural plan. Estimate of materials and cost.

Third Term. Detail drawings of interior finish and building fixtures. Building laws and contracts.

Drawing and Design.

LYLE I. BROWER, Professor of Drawing and Design.

Course 10.—ELEMENTARY ARCHITECTURE. A practical course in reading and understanding house plans. The course deals directly with the requirements of the prospective home builder. A study is made of a typical plan which will involve the essential elements of a modern home, one- and two-story, with reference to location, lot, finance, suitable plan, arrangement of rooms for convenience, light, sanitation and heat, materials and cost. Prerequisite, course 10. Two hours credit.

Course 13.—ARCHITECTURAL DESIGN. The designing of a modern residence with reference to its location, plan, convenience, sanitation, heating, lighting, and materials. Working plans and elevations, with detail drawings of special interior and exterior constructions. The instructions must conform to the actual practice in building operations. Each student is expected to design a house which he would build for himself. Other constructions, as schoolhouse, barn, etc., may be substituted or included. Prerequisite, course 12. Two hours credit.

Course 14.—SPECIFICATIONS AND ESTIMATES OF COST. A study of the modern house in relation to the cost of a medium-priced home. Cost of materials, types of exteriors, plans and heating systems. Detailed specifications for the home designed in course 13. Prerequisite, course 12. Two hours credit.

For electives in this department see Section III, page 100.

Education.

D. M. BOWEN, Professor.
FRANK DEERWESTER, Associate Professor.
EDGAR N. MENDENHALL, Professor of Rural Education.

Course 1.—INTRODUCTION TO EDUCATION. Required in all life-certificate courses for teachers, except the course for rural teachers. The aim of this course is to acquaint the student with educational facts which should be the common knowledge of every one engaged in education. This course also furnishes necessary groundwork for more advanced subjects in education. Three hours credit.

Course 2.—MODERN EDUCATION. The purpose of this course is to introduce the student to the best in modern educational ideas and educational practice. As a basis for this course the essential facts of modern educational development will be reviewed. Three hours credit.

Course 3.—ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL ARTS. This course deals with the principles underlying the organization of shop courses. A study is made of the organization of some of the best industrial and vocational schools; relation of industrial arts to other school courses; administration and supervision of an industrial arts department; planning equipment; cost of equipment and maintenance of courses in elementary and secondary schools; specifications for equipment and supplies. Two hours credit in the Department of Education.

Course 7.—GENERAL PSYCHOLOGY. The purpose of this course is to give the students a working knowledge of the accepted facts and general principles of psychology. In order to give a fair representation of the science as a whole, the descriptive, structural and dynamic phases of psychology are discussed. The point of view is on the whole functional, more attention being paid to what the mind does than to what it is. Discussions, outlines, readings, reports and simple experiments. Offered each semester. Three hours credit. Prerequisite for all other courses.

Course 8.—CHILD PSYCHOLOGY. The aim of the course is to acquaint students with the most important established facts and principles of mental and physical growth of the child. To enable students to recognize types and individual differences among the children; to notice, interpret and deal properly with certain defects; to cultivate an intelligent sympathy with children. Two hours credit.

Course 9.—PRINCIPLES OF EDUCATION. A course in the art of teaching, based principally upon the science of psychology. A discussion of the principles of psychology which are involved in teaching and their application in the work of the classroom, laboratory and shops. The following problems are analyzed and discussed, showing the interdependence of the various aspects of teaching method and the unity involved in mental development; attention and interest; the formation of habits; memory and the principles of memorizing; imagination, its development and use; thinking and reasoning; transfer of training; types of classroom exercises; how to study; individual differences. General Psychology a prerequisite. Three hours credit.

Course 51.—HISTORY OF INDUSTRIAL AND VOCATIONAL EDUCATION. The work of this course consists of lectures, readings and reports concerning the meaning and scope of industrial and vocational training, qualifications for teachers; early educational history; the beginning and development of manual training in the United States; the movement for the promotion of industrial education in the United States; legislation; work of trade, vocational and technical schools; sources of literature bearing on this phase of the public-school work. Three hours credit in Department of Education.

Course 52.—EDUCATIONAL MEASUREMENTS. An application of the principles of scientific management to the problems of the school; measuring the child, his physical and mental efficiency; the latest scientifi tests for measuring the product of teaching arithmetic, English composition, handwriting, drawing and other school studies. Prerequisite four hours psychology. Three hours credit.

English.

ERMINE OWEN, Professor.

Course 1.—CONSTRUCTIVE ENGLISH. The formal side of English, both written and spoken. A study of the paragraph, of sentence forms, o punctuation, letter writing and formal notes. The entire course correlated with a study of American Classics and the late war literature Four hours credit. Open to freshmen.

For the four additional hours required, the student will consult with the heads of the Industrial Arts and English Departments.

For electives in English see Section II, page 70.

History and Social Sciences.

G. W. Trout, Professor of Sociology.
O. F. Grubbs, Associate Professor of History.

Course 51.—Industrial History. A careful study of our natural resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to the present time. Besides the use of a text the students are required to prepare papers and read them before the class for discussion. Offered three hours per week during second semester of sophomore or junior year, college course. Three hours credit.

Course 71.—Economics. This course is designed to give the student a general view of the theory of economics and to lay special emphasis upon the present economic methods of wealth production and distribution with special reference to modern economic problems. Three hours credit.

Course 58.—Sociology. An introduction to the study of the nature, function and development or progress of society. The same as course 18, but more extended, reciting four times a week and giving four hours credit. This course is designed for those who have never had any work in Sociology and is a prerequisite to all other courses except course 18. Those having course 18 are not eligible for this course. Four hours credit.

For information concerning elective courses in History, Political Science, Economics, and Sociology, see Section II, course writeups, pages 73-76.

Mathematics and Applied Mechanics.

J. A. G. Shirk, Professor.
C. O. Van Dyke, Associate Professor.
C. W. Wright, Assistant Professor.
Jack Doty, Laboratory Assistant in Applied Mechanics

Course 8.—Industrial Mathematics. This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks; mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; house building; power transmission; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit. Prerequisite, two units of high-school mathematics, one unit of physics, or an equivalent experience in mechanic arts.

Course 15.—Elementary Surveying. A brief course in the use of surveyors' instruments; laying out of walks, drives, ditches, and buildings; calculation of cuts and fills; elements of land surveying. Prerequisite, Plane Trigonometry. Two hours credit.

Course 19.—Strength of Materials. A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shafting and reënforced concrete, resilience of materials. Two hours credit.

Course 20.—Mechanism. A study of the motion of machine parts and of methods of transmission of motion by means of links, belts, gears, and cams. This work is related closely to the machine motions used in the steam engine and various shop machines. Two hours credit.

Physical Sciences.

G. V. EMERY, Associate Professor.
W. H. MATTHEWS, Assistant Professor.

Course 23.—ELECTRIC WIRING. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Two or four hours credit.

Course 25.—GAS ENGINE I. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics, industrial activities, or in automobiles. Laboratory and lectures. Prerequisite, high-school physics. Three hours credit.

Course 26.—GAS ENGINE II (AUTOMOBILE ELECTRICITY). A companion course to course 25. Electrical circuits of the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts. Prerequisite, high-school physics. Two hours credit.

Course 33.—ELECTRICAL MACHINERY. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment, rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, high-school physics. Four hours credit.

Physical Education.

G. W. WEEDE, Director of Physical Education for Men.
PAUL ALYEA, Assistant Director.

Course 1.—PHYSICAL EXERCISE. This is a course of body-building nature.

Men: Three hours of exercise per week. One hour credit. The course consists of—

(*a*) One hour of outdoor games while the weather permits. One hour of corrective calisthenics and gymnastic dancing. One hour of apparatus work, pyramid building and tumbling.

(*b*) Elective work in intercollegiate athletics for the length of season only, in place of (*a*).

Course 2.—PHYSICAL EXERCISE. Three hours of exercise per week. One hour credit.

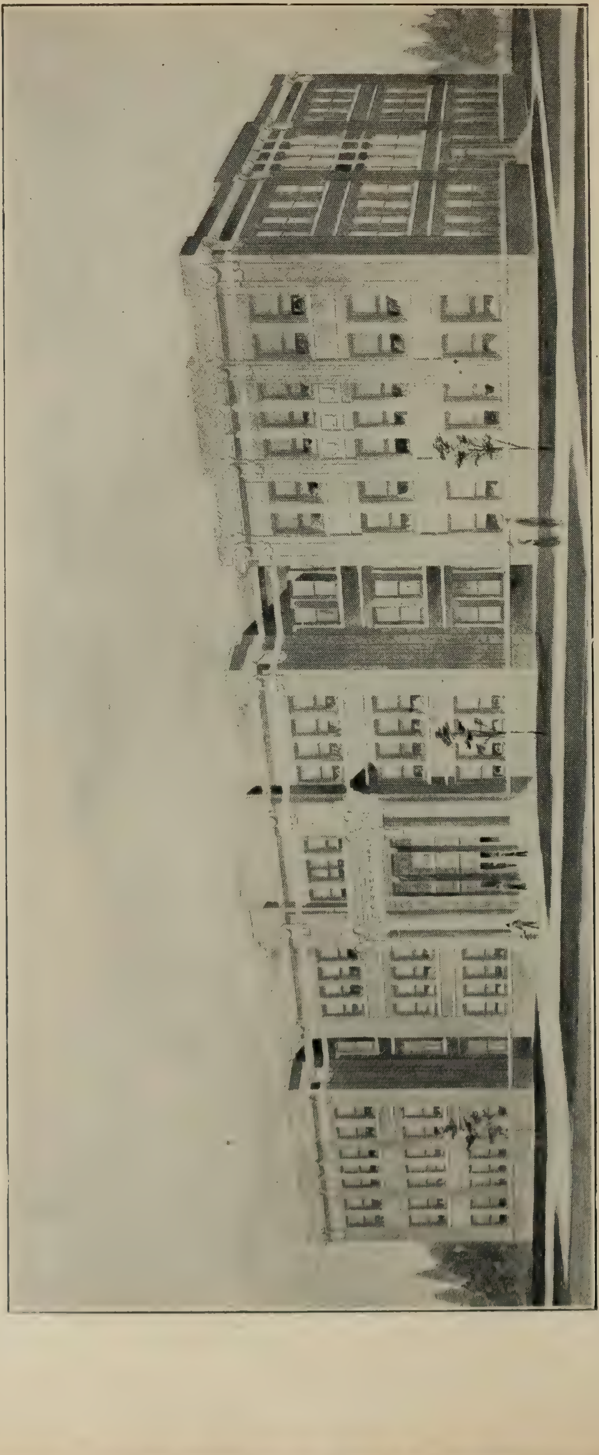
Men: Continuation of work under (*a*) in course 1. At close of annual gymnastic exhibition all work is out of doors in track or baseball.

For Physical Education in Senior College confer with the Director.

For electives in this department see Section III, pages 110, 111.

SECTION V.

Home Economics.



CARNEY HALL.

HOME ECONOMICS AND BIOLOGICAL AND PHYSICAL SCIENCES.

The Faculty.

W. A. BRANDENBURG, Ph. B., President.

ADELA ZOE WOLCOTT, Ph. B., A. M., Professor of Home Economics and Joint Director.

AGNES SAUNDERS, A. B., A. M., Professor of Home Economics and Joint Director.

ANNIE MARRIOTT, B. S., Assistant Professor.

GRETA EULALIA SMITH, B. S., Assistant Professor.

EDITH E. CASSEDAY, Assistant Professor.

HENRIETTA PRIBNOW, B. S., Assistant Professor.

VIRGINIA SHEARER, B. S., Assistant Professor.

LYLE BROWER, B. S., Professor of Drawing and Design.

EVELYN JOAN METZGER, Assistant Professor of Drawing.

ERMINE OWEN, M. A., Professor of English.

FRANK DEERWESTER, A. B., Pd. M., Pd. D., Associate Professor of Education.

JAMES ANDERSON YATES, B. S., M. S., Professor of Chemical and Physical Sciences.

ORIS P. DELLINGER, A. B., Pd. B., Professor of Biology.

D. M. BOWEN, A. B., Professor of Education.

O. F. GRUBBS, A. B., B. S., Associate Professor of History.

GEORGE V. EMERY, A. B., Associate Professor of Physical Sciences.

G. W. TROUT, A. M., Professor of Sociology.

MARGARET COVENTRY, Assistant Professor of Chemistry.

GEORGE V. EMERY, A. B., Associate Professor in Physics.

W. R. CLEVELAND, B. S., M. S., Associate Professor Physical Science.

RICHARD R. SIGLER, A. M., Associate Professor.

Home Economics.

The courses in this department are planned with three purposes in view: (1) To give training in the scientific administration of the home; (2) To train for teaching; (3) To prepare students to pursue some special line of activity, such as dietitian and institution manager. The courses offered are classified under four heads, namely: Foods and Nutrition, Clothing and Textiles, Household and Institution Management, and Home Economics Education. The regular courses of the department are supplemented by courses given in other departments, as Biology, Chemistry, Sociology, Drawing, English and Education.

ENTRANCE REQUIREMENTS.

A high-school education or its equivalent is required for entrance. High-school courses in domestic science and art are not required. Students who have taken one or more years of work in foods or clothing in the high school may take examinations over these subjects if they desire. If the examination is satisfactory, Technology of Cookery and Technology of Sewing are substituted for Foods I and Clothing I in their course.

CERTIFICATES AND DEGREES.

Students who have attended the State Manual Training Normal School for one semester and who have met the requirements of the first two years of the course as outlined are entitled to a life certificate for elementary, two-year and junior high schools. A special certificate to teach Home Economics in high schools is issued upon completion of freshman and sophomore work as outlined on page 143 of this catalogue.

Students who have attended the State Manual Training Normal School for one year and who have completed the four-year course as outlined below will be granted the degree of bachelor of science, which degree is a life certificate to teach in any elementary or high school in the state of Kansas.

REQUIREMENTS.

The work of the first two years is specifically outlined. At the beginning of the junior year students have the privilege of majoring in any one of the four divisions given above. For example, the student majoring in Foods and Nutrition will select from this division the required number of hours designated as home economics major in the junior and senior year.

One hundred and twenty-four hours are required for graduation from the degree course. These required courses are grouped as follows: Home Economics, 40 hours; Professional, 20 hours; Physical Sciences, 12 hours; Biology, 10 hours; English, 7 hours; History, 8 hours; Drawing, 6 hours; Physical Education, 4 hours; Electives, 17 hours.

Courses numbered from 1 to 50 are open to freshmen and sophomores. Those numbered from 51 to 100 are open to juniors and seniors. Any variation from the above will be upon the recommendation of the head of the department.

HOME ECONOMICS.—Degree, 40 hours; life certificate, 24 hours. This course is so arranged that a life certificate in home economics is granted upon the completion of the first two years of work.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Foods 1	3	Foods 2	3
Clothing 1	3	Clothing 2	3
Chemistry 1	5	Drawing 5	2
English 1	4	Biology 11 (Physiology)	4
Physical Education 1	1	Psychology 7	3
		Physical Education 2	1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Foods 3	1	Foods 5*a*	2
Clothing 3*a*	2	Foods 5*b*	3
* Methods 4 and 5	3	Clothing 6	4
Principles of Education	3	Practice Teaching	3
Organic Chemistry	3	Bacteriology 16	4
Drawing 19	2		
Sociology	2		
	16		16

JUNIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Home Economics major	4	Home Economics major	4
* Home Economics Education 61	3	Household Management 52	2
Biology 53	2	Chemistry 60 or 62	4
Industrial History	3	Drawing	2
Physical Education	1	Physical Education	1
Electives	2	Electives	2
	15		15

SENIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Household Administration 60	4	Home Economics major	2
* Home Economics Education 62	3	* Home Economics Education 63, or General Education	2
English or Public Speaking	3	Sociology	3
Electives	5	Electives	8
	15		15

* These courses are taught in the Home Economics Department, but count as Education.

Description of Courses.

Home Economics.

FOODS AND NUTRITION.

Course 1.—ELEMENTS OF COOKERY. This course is planned for students who have not had a course in food preparation in high school. It develops skill in the technique of cookery, and takes up a thorough study of foods; kinds, growth, preparation for market, composition, digestibility and fuel value. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 2.—FOODS AND COOKERY. This is a continuation of course 1. The two courses cover a study of beverages, cereals, vegetables, batters and dough, meats and poultry, fish, eggs, milk, and cheese. Following this scientific study of foods, preliminary work in serving and making menus is taken up. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 1*a*.—TECHNOLOGY OF COOKERY Courses 1*a* and 2*a* are planned for those students who have had the equivalent of a good two-year high-school course in foods and cookery. It deals with the more difficult problems of the technique of cookery and with the principles underlying the cookery of all types of foods. Much time is spent on efforts to give the students the viewpoint of a teacher of cookery. The student's work during these courses will give a content sufficient for a teacher's background in foods and cookery and the best methods of presenting the work in elementary and secondary schools. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 3.—PRESERVATION OF FOODS. This course includes the study of food preservation. Canning and preserving of fruits, jellies, conserves, marmalades and pickling, canning of vegetables. One hour credit. A fee is charged to cover materials used in laboratory.

Course 5*a*.—HOME COOKERY AND TABLE SERVICE. The purpose of this course is to give opportunity for practice in home cookery, fancy cookery, and the serving of both formal and informal meals. Two hours credit. A fee is charged to cover material used in laboratory.

Course 5*b*.—ELEMENTARY NUTRITION. This course describes very simply the essentials of an adequate diet, and the nutritive properties of common food materials. The application of such knowledge to the feeding of individuals and family groups is discussed with special reference to limitations of cost. Three hours credit.

Course 8.—COOKERY FOR RURAL SCHOOL TEACHERS. This course is planned for rural-school teachers and has for its aim the study of possibilities of instruction in cookery in these schools. Training is given in the principles of cookery and courses of study are made. A study is made of equipment for teaching cookery in rural schools, serving of noonday lunches, home economics community clubs, and other problems which might arise. Three hours credit.

Course 51.—EXPERIMENTAL COOKERY. This is a quantitative study of cooking processes, comparative study of recipes, and the cost of materials involved. Relative values of various food products common in the present-day markets. Work in demonstrations will be given along with this course. Two hours credit. A fee is charged to cover materials used in laboratory.

Course 53.—DIETETICS AND NUTRITION. This course presents the application of the fundamental principles of human nutrition under varying physiological and economic conditions; in the laboratory quantitative studies of food values are made. The course deals with food requirements of the individual in infancy, adult life, and old age. Typical dietaries are planned for the individual and family requirements. Four hours credit. A fee is charged to cover materials used in laboratory.

Course 54.—ELEMENTARY RESEARCH. Special problems in housewifery and housekeeping; surveys of city family conditions and rural family conditions will be made, and the general purpose of the household and family as related to the state, to education, and to industry will be investigated. The thesis work of the graduate students will be done in this course. Two hours credit.

Course 55.—DEMONSTRATION. This course offers a study of cookery demonstration, and equips the student to give instructive demonstrations. The aim of this course is to fit the teacher to do community work, as well as classroom work. Two hours credit. Fee charged to cover materials used in laboratory.

Course A.—COOKERY. This course is purely practical and includes the preparation of vegetables, fruits, cereals, meat, eggs, bread, cakes and pastry; also work in canning and preserving. Attention is given to food combinations, place in the menu, and cost. One hour credit. A fee is charged to cover materials used in laboratory.

TEXTILES AND CLOTHING.

Course 1.—SEWING AND GARMENT MAKING. This is a general preparatory course for students who have had no domestic art in the high school. It covers all the fundamental elements of sewing and gives practice in applying them upon simple garments and dresses. A fee is charged to cover material used in laboratory. Three hours credit.

Course 2.—SEWING AND GARMENT MAKING. This course deals with the simple problems of cutting, fitting, and alteration of commercial patterns. Special attention is given the making and use of demonstration material. A wash dress, a tailored middy, and a tailored linen dress are made. Prerequisite, course 1. A fee is charged to cover materials used in laboratory. Three hours credit.

Course 1*a*.—TECHNOLOGY OF SEWING. This course is planned for those who have had one or more years of sewing in the high school. It deals with the more difficult problems of the technique of sewing. Considerable time is spent in efforts to give the students the viewpoint of the teacher of sewing, and also the best methods of presenting the work in elementary and secondary schools. Three hours credit.

Course 3.—TEXTILES. This course presents the foundation principles of the textile industry, special emphasis being placed upon early methods as an interpretation of the present methods of manufacture. The student is prepared to present this work in a graphic way and to become an intelligent judge of the quality and suitability of the various fabrics used for personal and household purposes. A fee is charged to cover the materials used in laboratory. Four hours credit.

Course 3*a*.—This course deals with the elementary problems of textiles and is planned for life-certificate students. Two hours credit.

Course 4.—DRAFTING. Straight-line drafting is taught in this course. Pattern making, simple designing, the altering and adjusting of patterns to various fabrics of form are studied. A fee is charged to cover materials used in laboratory. Two hours credit.

Course 6.—DRESSMAKING. Commercial patterns, the proportions of the human form, the application of the principles of design and color to the gown, and the finishing of waists and gowns are studied in this course. The projects are a waist, a woolen or worsted dress, and a graduation gown. Prerequisite, course 4. A fee is charged to cover material used in laboratory. Four hours credit.

Course 7.—EMBROIDERY AND NEEDLEWORK. This course provides instruction in various kinds of embroidery. Crocheting, tatting and other phases of needlework are developed. A fee is charged to cover materials used in laboratory. Two hours credit.

Course 8.—SEWING FOR RURAL SCHOOL TEACHERS. This course has for its aim the training of teachers in work in domestic art which might be given in rural schools. The work consists of hand sewing chiefly, also the teaching of good taste in color combinations and decoration. Outlines and courses of study are made. A fee is charged to cover materials used in laboratory. Three hours credit.

Course 51.—DESIGNING AND DRAPING. This course gives instruction in advanced drafting and designing. Waists, skirts, sleeves and gowns are designed from foundation drafts, and more elaborate designs are draped on the form, cheesecloth and other inexpensive materials being used. No garments are made, but an invaluable knowledge of line and proportion is gained. Prerequisite, course 4. A fee is charged to cover materials used in laboratory. Four hours credit.

Course 52.—ADVANCED DRESSMAKING. This course provides opportunity for further developing the sense of line and proportion gained in courses 4 and 51. It deals with the characteristic use of silks and velvets. The projects are an afternoon gown and an evening gown. Prerequisite, course 51. A fee is charged to cover materials used in laboratory. Four hours credit.

Course 53.—ADVANCED NEEDLEWORK. This course includes the planning and making of a layette. The school furnishes the material for garments unless the student wishes to keep the articles made. Prerequisite, course 1. A fee is charged to cover the material used in laboratory. Two hours credit.

Course 54.—MILLINERY. This course deals with the selection of materials, the making and covering of frames, the fitting and trimming of hats, the making of flowers, and the renovating of millinery materials. Emphasis is placed upon the proper selection of hats, and their suitability to the wearer and the occasions for which they are intended. A fee is charged to cover material used in laboratory. Four hours credit.

HOUSEHOLD AND INSTITUTION MANAGEMENT.

Course 9.—HOUSEWIFERY. This course treats of kinds of service needed in various parts of the household, and the systematic planning of the daily routine; labor-saving appliances; repairing and renovation; household efficiency with reference to housekeeping methods. Two hours credit.

Course 52.—HOUSEHOLD MANAGEMENT. General management of the home is studied in this course. Care of the house; values in furnishings; investigations and discussion which will secure an intelligent judgment of expenditures involved in housekeeping: rent, fuel, light, water, furniture, and the cost of living; sanitation and the prevention and removal of unsanitary conditions. Laundry work is studied in this course. Two hours credit.

Course 58.—INSTITUTION COOKERY. This course is made up of lectures, conferences, observations and practice. The practice work consists of the preparation of food in large quantities, catering for entertainments, school lunches and banquets. A study is made of room plans, equipment, arrangement of menus, problems in connection with the serving of food, employees, fod economics, and waste control, and the purchase of food in large quantities. Visits are made to local institutions, such as hotels and hospitals. This course is given in the college cafeteria. Three hours credit.

Course 59.—LUNCH-ROOM MANAGEMENT. This is a cousre for students who wish to prepare for lunch-room management. A study is made of the principles of scientific management and their application to lunch rooms; charting, time and motion studies, standardization of equipment and processes, making of schedules for employees, score cards, record keeping, etc. A trip to Kansas City for the purpose of visiting and inspecting various types of lunch rooms, wholesale houses, etc., is advised. Two hours credit.

Course 60.—HOUSEHOLD ADMINISTRATION. From six to ten weeks experience as manager and helper in a household of senior students. Four hours credit.

HOME ECONOMICS EDUCATION.

Course 4 and 5.—METHODS. This is a special methods course dealing with administrative problems connected with home economics subjects in the public schools. The course includes the making of courses of study throughout the grades and high school, cost and planning of equipment, the correlation of these subjects with other subjects, educative value courses and disciplinary problems. Three hours credit.

Course 61.—METHODS IN SECONDARY VOCATIONAL HOME ECONOMICS. This course considers the relation of home economics to education; the methods of teaching; relation to high-school curriculum; the planning of lessons and courses of study suitable to the methods and purpose of vocational home economics; studies and experiments with materials and subjects leading to operations involving household occupations in preparation for organization of project work. Three hours credit.

Course 62.—SUPERVISED TEACHING. Practice in planning and presenting of courses, conferences and critiques. Three hours credit.

Course 63.—SEMINAR IN HOME ECONOMICS EDUCATION. This course includes the study of problems in administration, organization, materials and equipment. Two hours credit.

Course 64.—ORGANIZATION OF TEACHER TRAINING IN HOME ECONOMICS. A consideration of the problems in organization of Home Economics for all-day, part-time, and evening classes; curricula, courses of study, and preparation of teachers for the various types of school will be treated. Two hours credit.

Course 65.—ADMINISTRATION AND SUPERVISION OF VOCATIONAL HOME ECONOMICS. This course is planned to meet the needs of supervisors of Home Economics. The topics treated are legislation, types of schools, supervisory plans and courses of study. Two hours credit.

Course 66.—HISTORY OF THE FAMILY. This course includes the history of the family from early ages to the present time; the industrial revolution and its effects upon family life, and an examination of the present situation and tendencies as they affect the life of the American family. Three hours credit.

Course 67.—EDUCATION OF WOMEN. Woman's work and her industrial and economic conditions are studied with reference to the home and society. Opening of occupations and professions to women; a study of modern problems of woman and the home, suffrage, education, economic function of woman and the family. Two hours credit.

Biological Sciences.

O. P. DELLINGER, Professor.
RICHARD SIGLER, Assistant Professor.

Course 11.—HUMAN PHYSIOLOGY. The purpose of this course is to teach those things that will enable the student to make of his or her body, and also the bodies of those they minister to, the most efficient mechanism possible. The requirements of the body as to food, exercise, sleep, fresh air, bathing, etc. The physiological requirements of children, where they differ from the adult, will be emphasized. The physiology of reproduction will receive the attention it deserves. Daily for twenty weeks. Four hours credit. Laboratory fee for material used.

Course 16.—GENERAL BACTERIOLOGY. This course is required of all students who major in domestic science or agriculture, and is open to any student in the college course. It is a general introductory course consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit. Fall, spring and summer terms. Laboratory fee for material used.

Course 53.—GENETICS. The course is especially designed for domestic science students, but is open to all students of college grade. A careful review of the literature on heredity and eugenics is given, together with a study of the law of reproduction. Two hours or four hours credit.

For electives in this department see Section II, pages 52-54.

Chemical and Physical Sciences.

J. A. YATES, Professor.
W. R. CLEVELAND, Associate Professor of Chemistry.
MARGARET COVENTRY, Assistant Professor of Chemistry.

CHEMISTRY.

Course 1.—GENERAL CHEMISTRY. This course consists of lectures, recitations and laboratory work upon the fundamental principles of this science, together with the application of chemistry to the various arts and industries. Among the practical subjects considered are chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils and varnishes, water, air, fuels, and the elementary principles of chemistry in food preparation and other operations in the home. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. This course is not open to students offering elementary chemistry for admission. Laboratory fee for material used. Five hours credit.

Course 51.—ORGANIC CHEMISTRY. A general course in organic chemistry, including lectures, recitations and laboratory work. This course emphasizes the properties and uses of the organic compounds found in our industrial activities, together with the underlying chemical principles involved. Prerequisite, Chemistry 1. Laboratory fee for material used. Three hours credit.

Course 60.—TEXTILE CHEMISTRY. This course deals with the chemical examination and identification of the different textiles, and a brief study of dyeing. Prerequisite, Chemistry 1. Laboratory fee for material used. Four hours credit.

Course 62.—PHYSIOLOGICAL CHEMISTRY. This course consists of a study of the chemical changes involved in the cooking, digestion and absorption of foods; the chemistry of the blood and tissues of the body. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Laboratory fee for material used. Four hours credit.

Drawing.

LYLE I. BROWER, Director.
EVELYN JOAN METZGER, Assistant Director.

Course 5.—PRINCIPLES OF DESIGN. The study of the principles of design, with studio practice in the structure of pattern, space filling, and the use of color and value. The application in design is directly related to definite problems. Credit two hours.

Course 25.—INTERIOR DECORATION. The study of line, proportion, spacing, arrangement and color as applied to home decoration. Lectures and studio practice. Two hours credit.

Course 56.—COSTUME DESIGN. The study of the rhythm and grace of line in the figure and costume. Costumes and colors for different types and complexions. Color and texture combinations in various materials. Sketching from gowns, hats and original designs. Lectures and studio practice. Two hours credit.

For electives in this department see Section III, pages 100-103.

Education.

D. M. BOWEN, Professor.
FRANK DEERWESTER, ———.
EDGAR MENDENHALL, ———.

Course 7.—GENERAL PSYCHOLOGY. The purpose of this course is to give the students a working knowledge of the accepted facts and general principles of psychology. In order to give a fair representation of the science as a whole, the descriptive, structural and dynamic phases of psychology are discussed. The point of view is on the whole functional, more attention being paid to what the mind does than to what it is. Discussions, outlines, readings, reports and simple experiments. Offered each semester. Three hours credit. Prerequisite for all other courses.

Course 9.—PRINCIPLES OF EDUCATION. A course in the art of teaching, based principally upon the science of psychology. A discussion of the principles of psychology which are involved in teaching and their application in the work of the classroom, laboratory and shops. The following problems are analyzed and discussed, showing the interdependence of the various aspects of teaching method and the unity involved in mental development; attention and interest; the formation of habits; memory and the principles of memorizing; imagination, its development and use; thinking and reasoning; transfer of training; types of classroom exercises; how to study; individual differences. General psychology a prerequisite. Three hours credit.

For electives in this department see Section II, pages 65-68.

English.

ERMINE OWEN, Professor of English.
PRESTON E. REED, ———.

Course 1.—CONSTRUCTIVE ENGLISH. The formal side of English, both written and spoken. A study of the paragraph, of sentence forms, of punctuation, letter writing and formal notes. The entire course correlated with a study of American Classics and the late war literature. Four hours credit. Open to freshmen.

For electives in this department see Section II, pages 70, 71.

History and Social Sciences.

G. W. TROUT, Professor of History and Social Science.
O. F. GRUBBS, ———.

Course 51.—INDUSTRIAL HISTORY. A careful study of our natural resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to the present time. Besides the use of a text the students are required to prepare papers and read them before the class for discussion. Offered three hours per week during second semester of sophomore or junior year, college course. Three hours credit.

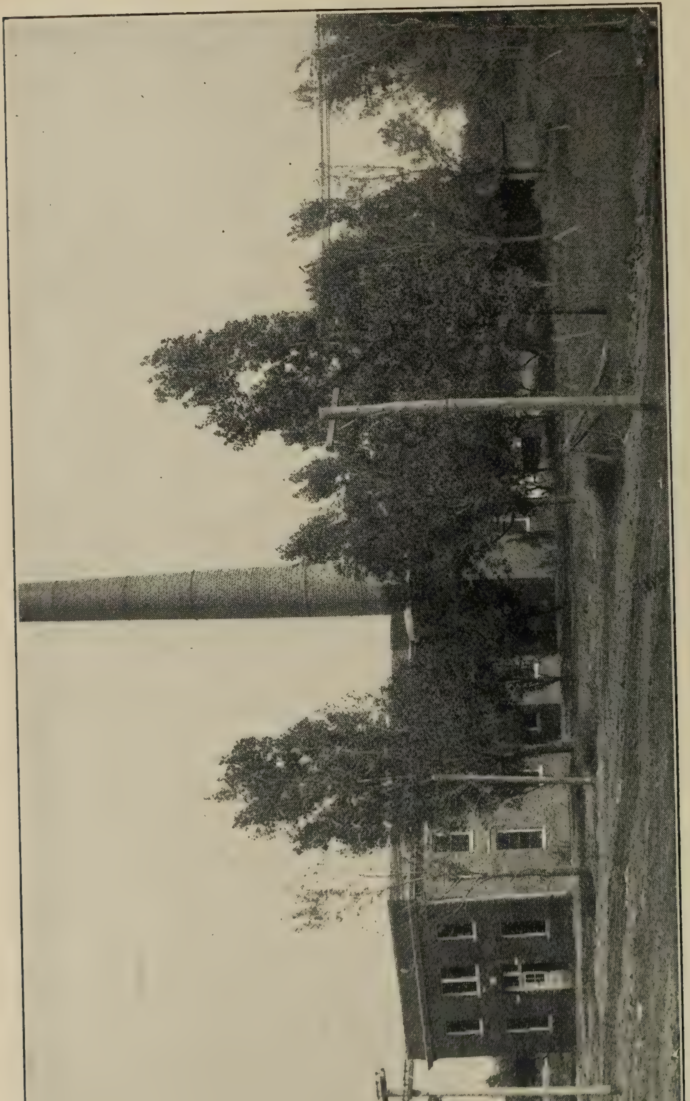
Course 18.—SOCIOLOGY. An introductory study of the nature, function and development or progress of society. The aim is to familiarize the student with society and some of its problems and cultivate a desire to aid in the solution of these problems. Three hours credit.

Course 59.—APPLIED SOCIOLOGY. In this course we endeavor to apply the principles of sociology to present-day problems. Course 58 is a prerequisite. Offered two hours per week during second semester of senior year, college course. Two hours credit.

For electives in this department see Section II, pages 73-76.

SECTION VI.

Engineering and Technical Courses.



POWER PLANT.

The Faculty.

W. A. Brandenburg, Ph. B., President.

J. A. Yates, B. S., M. S., Director of Electrical and Mining Engineering and Professor of Chemical and Physical Sciences.

J. A. G. Shirk, A. M., M. S., Director of Civil and Mechanical Engineering and Professor of Mathematics and Applied Mechanics.

Ermine Owen, M. A., Professor of English.

S. J. Pease, M. A., Professor of Languages.

G. W. Weede, B. S., D. D. S., Director of Physical Education for Men.

C. O. Van Dyke, M. A., Associate Professor of Mathematics.

George V. Emery, A. B., Associate Professor of Physics.

W. R. Cleveland, B. S., M. S., Associate Professor of Chemistry.

F. H. Dickinson, Assistant Professor of Industrial Arts.

Charles R. Wasser, Assistant Professor of Industrial Arts.

Ernest Bennett, B. S., Assistant Professor of Languages.

Clinton W. Wright, A. B., Assistant Professor of Mathematics.

Wm. H. Matthews, Assistant Professor of Physics.

H. T. James, Instructor of Industrial Arts.

Jack Doty, Laboratory Assistant in Applied Mechanics.

Tobias F. Ziegler, Assistant in the Electrical Laboratory.

Paul J. Alyea, Assistant Director of Physical Education for Men.

Organization and Purpose.

The introduction of technical instruction into the curriculum of this institution was brought about by the insistent demand for training made by the men working in the mines and industrial plants of this region. As early as 1910 night classes in the elements of mining were organized for the miners. These classes were attended by large numbers of men, and demonstrated very clearly the great need for practical instruction. In 1912 night classes in applied electricity were started and these classes also were well attended by men engaged in the various electrical industries. Instruction in other lines was added as rapidly as the facilities of the institution permitted. Many young men attending the regular school work began to take advantage of the practical instruction originally planned for the training of teachers of industrial arts, physical sciences, and mathematics. These courses have been gradually developed into the engineering courses now being offered by this institution.

There are three groups of students at present enrolled in the engineering courses. First, those high-school graduates desiring to take a four-year engineering course leading to a degree in some type of engineering. Second, those high-school graduates and advanced practical engineers who feel that they cannot spend four years in securing a technical education, and who therefore desire to take a shorter course in which as much practical work as possible has been introduced. This has been accomplished by reducing to the minimum the general courses in mathematics, physics, chemistry, and other preparatory engineering subjects. The third group is composed of men who have had a limited educational training, having generally never attended a high school, but who desire to advance to better positions in their particular vocations. These men take the vocational courses for miners, stationary engineers, or electricians. These courses can be finished by the industrious student in one year, and the training secured from the completion of one of them will be very valuable in entering the occupation for which the course is designed, or for taking up more advanced work in the Industrial Engineering courses.

These two-year Industrial Engineering courses are intended for the second group of students previously mentioned, and a complete description of them is given in the following pages.

The students of the first group should select regular college courses which correspond in subject material and credit to the Freshman and Sophomore courses of the engineering school in which they are expecting to complete their technical education. Under an agreement with the University of Kansas formulated in 1915, students of this institution are awarded full credit, hour for hour, for courses of collegiate grade which correspond to the University courses. This means that students will receive full credit for the regular courses in mathematics, physics, chemistry, elementary geology, mechanical drawing, shop work, elementary surveying, elementary steam power plants, foreign languages, and English. In this manner, by selecting the proper studies it will be found possible for students to cover two full years of the professional engineering courses at the University, and be able to complete these courses and secure an engineering degree in two years more.

The spirit of the faculty and student body of this institution cannot be excelled in the coöperation and enthusiasm manifested in every phase of school life. Every young man who spends a part of his school days here will carry away with him high ideals of performing faithfully his part in life's activities.

THE ENGINEERING SOCIETY.

The Engineering Society is composed of those students who are taking technical work in this institution with a purpose of becoming practical engineers, and those instructors who are engaged in teaching this type of work. Monthly meetings are held, and the programs include reports on current engineering topics by instructors and students, reports of scientific meetings and associations, lectures by prominent engineers and business men connected with industrial organizations. The membership also comprises many students who are specializing in Mathematics and Physical Science for the purpose of becoming teachers, and who wish to get into close contact with the practical applications of their special subjects. This organization is serving a valuable purpose in linking closely together the practical engineers with those teachers who are teaching work directly related to practical vocations.

THE LIBRARY.

All students have access to the school library, in which will be found a collection of trade and technical periodicals and reference works of especial value to those engaged in industrial pursuits.

EQUIPMENT.

The institution possesses sufficient apparatus of a technical nature to offer up-to-date instruction in each of the courses named. This is constantly being added to in order that it may more completely meet the needs of the classes. The shops and drafting rooms are large and well equipped for such shop work as is required, and the laboratories contain much material specially purchased for practical instruction. The aim of the mathematics and science departments has always been to emphasize the practical side of their courses; accordingly their equipment has been selected for the value it may possess in teaching the applications of the theoretical principles discussed in the classrooms.

Industrial Engineering Courses.

This institution offers courses in civil, electrical, mechanical and mining engineering for those who are ambitious to fill positions above the grade of skilled mechanics in mines and manufacturing and industrial plants. A superintendent or manager must have a more thorough training in the theoretical side of the subject. This must be preceded by a more extensive course in mathematics and science than is necessary for trade instruction.

The completion of a full high-school course is recommended for entrance to these courses, but men who have the advantage of extensive practical experience along the line of the course that they wish to enter will generally find that their preparation is sufficient.

The courses are designed for two years' work for industrious and capable students. A diploma is granted to those who complete satisfactorily any of the two-year courses.

INDUSTRIAL CIVIL ENGINEERING.

Civil engineering has to do with planning, locating, and construction of public works such as bridges, railroads, hydraulic plants; with municipal improvements such as sewer systems, paving, drainage, parks, and waterworks; and with the measuring and mapping of lines both on the surface of the ground and beneath the surface. This latter type of work is known as mine surveying, and the course as outlined covers the essentials of this type of surveying. Civil engineering includes several different classes of work, and the purpose of the course offered at this institution is to get acquainted with the elements of the main types of work so that the student may make a wise selection of the field in which he wishes to specialize.

INDUSTRIAL ELECTRICAL ENGINEERING COURSE.

Electrical engineering, as is indicated by the name, has to do with the study of electricity and the different electrical machines and appliances that utilize this important force; in a word, the generation and utilization of this wonderful power. Practically every line of mechanical work employs electricity in some way. The purpose of this course is to thoroughly acquaint the student with the installation, care and repair of the different lines of electrical machinery and appliances. Never in the world's history has electricity played so large a part in the world's work as to-day, and this practical course is planned to train those who complete it to understand and to be able to fill positions in the various lines of electrical work. The practical side of the work is stressed in this course, and is intended to prepare those who wish to enter electrical industries.

INDUSTRIAL MECHANICAL ENGINEERING COURSE.

Mechanical Engineering embraces the design, construction and operation of machinery. The many new inventions make the mechanical engineer a factor of growing importance in the world's work. In order to become efficient in this vocation, a foundation of mathematics, science, and drafting must be obtained. In addition to these subjects, which enable the student to think correctly and express his ideas by means of drawings, a definite training along some special lines of machinery must be secured. Generally steam engineering is the more important type of mechanical engineering because of the universal use of steam machinery and refrigerating machinery. All of these subjects are included in the course as outlined, giving the student an appreciation of the relation of the various kinds of machinery whose operation is under the charge of mechanical engineers.

INDUSTRIAL MINING ENGINEERING COURSE.

This course is intended to prepare those who take it with a practical working knowledge of the different positions necessary for the operation of this important industry. Our mines furnish the materials which are absolutely essential to the operation of our manufacturing industries. Without coal our machines for manufacturing and transportation must lie idle; in fact, without coal and other mining products we would have no machinery. The mining industry is considered a very hazardous one, and the purpose of this short, practical course is to so acquaint those who are to have charge of the work, with the science involved, that many of the hazards or accidents which too often occur in and around our mines may be removed. The location of this institution, in the center of the great coal field of our state, gives an ideal opportunity for the student to study at first hand the operation of coal mines. The lead and zinc mines of our state are also located near the institution, and are connected by trolly with the city of Pittsburg. The student may, with little expense to himself, visit and study both the coal and metal mines of our state.

On the campus is located the building of the central mine rescue station in which are the offices of the State Mine Inspector and Mine Rescue Superintendent. Through the work of these officers opportunity is given the student in mining to get information in a practical way involved in the operation of mines. The equipment of the chemical and electrical laboratories has been selected with the idea of its use in the operation of mines as well as in other industrial work. The student will find a nucleus of a geological museum in which are specimens of especial interest to mining students.

Curricula in Engineering Courses.

INDUSTRIAL CIVIL ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Industrial Mathematics	3	Plane Trigonometry	2
Elementary Surveying	3	Mine Surveying	2
Pattern Making, Foundry and Forging,	2	Bench Metal and Elementary Machine Shop	2
Mechanical Drawing	2	Machine Drawing	2
Chemistry 1	5	Strength of Materials	2
Physical Education 1	1	Elementary Steam Power Plants	3
		Electric Wiring	2
		Physical Education 2	1
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Mechanics and Heat	4	Railroad Surveying	2
Topographical Surveying	3	Hydraulics	3
Mechanism	2	Sanitation and Water Supply	2
Graphic Statics	2	Sewers, Roads, and Pavements	2
Mine Gases and Ventilation	2	Electricity and Magnetism	4
Geology	3	Contracts and Specifications	2
		Technical Report	1
	16		16

INDUSTRIAL ELECTRICAL ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Industrial Mathematics	3	Plane Trigonometry	2
Gas Engines	3	Electric Wiring	3
Pattern Making, Foundry, and Forging	2	Electricity and Magnetism	4
Mechanical Drawing	2	Bench Metal and Elementary Machine Shop	2
Chemistry I	5	Machine Drawing	2
Physical Education I	1	Strength of Materials	2
		Physical Education 2	1
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Mechanics and Heat	4	Gas Engine Electricity	3
Electrical Measurements	3	Illumination	2
Mechanism	2	A. C. Machinery	4
Armature Winding	2	Elementary Surveying	2
D. C. Machinery	2	Contracts and Specifications	2
Electrical Installations	3	Storage Batteries	2
		Technical Report	1
	16		16

INDUSTRIAL MECHANICAL ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Industrial Mathematics	3	Plane Trigonometry	2
Gas Engines	3	Strength of Materials	2
Pattern Making, Foundry, and Forging	2	Elementary Steam Power Plants	3
Mechanical Drawing	2	Electricity and Magnetism	4
Chemistry 1	5	Bench Metal and Elementary Machine Shop	2
Physical Education 1	1	Machine Drawing	2
		Physical Education 2	1
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Mechanics and Heat	4	Refrigeration	2
Thermodynamics	2	Hydraulics	3
Mechanism	2	Steam Turbines	2
Graphic Statics	2	Machine Design	2
D. C. Machinery	2	A. C. Machinery	4
Advanced Machine Shop	2	Contracts and Specifications	2
Electric Wiring	2	Technical Report	1
	16		16

INDUSTRIAL MINING ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Industrial Mathematics	3	Plane Trigonometry	2
Gas Engines	3	Qualitative Analysis	3
Pattern Making, Foundry, and Forging	2	Explosives	2
Mechanical Drawing	2	Electric Wiring	2
Chemistry 1	5	Strength of Materials	2
Physical Education 1	1	Bench Metal and Elementary Machine Shop	2
		Machine Drawing	2
		Physical Education 2	1
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Elements of Mining	3	Mining Engineering	2
Coal Mining	3	Mineralogy	2
Mine Gases and Ventilation	2	Mine Surveying	2
Geology	3	Electricity and Magnetism	4
Quantitative Analysis	3	Elementary Steam Power Plants	3
Elementary Surveying	2	Contracts and Specifications	2
		Technical Report	1
	16		16

Mathematics and Applied Mechanics.

J. A. G. Shirk, Professor.
C. O. Van Dyke, Associate Professor.
C. W. Wright, Assistant Professor.
Jack Doty, Laboratory Assistant in Applied Mechanics.

Scope of Work. The department offers the usual courses in collegiate mathematics, and also many courses of an industrial and vocational nature. Some of these latter courses do not require an extended mathematical training as a prerequisite, and are intended to aid young men in the solution of shop problems. Many of these technical courses demand considerable mathematical knowledge before they can be studied to an advantage, and consequently those courses which furnish the foundation for them are required as prerequisite. Each course has a statement of the purpose of the course and the other subjects required before entering it.

EQUIPMENT.

Mathematics. The department has a good collection of models in wood and string, illustrating the various geometrical figures. The surveying equipment includes two engineer's mountain and mining transit theodolites, one engineer's wye level, one architect's and builder's level, one farm level, levelling rods, range poles, tapes, planimeters, protractors, and other minor instruments and accessories. The other industrial courses in mathematics are rapidly being provided with drawings of machine parts, models of machines, and in many cases the actual machines, for illustrating the computations involved. For the study of callipers and the slide rule, large models are provided which are easily seen by the entire class.

Testing of Materials. Forty thousand pound Reihle Universal Testing Machine is available for the study of the strength of wood, metals, concrete, and other materials in tension, compression, and shear. Beams and columns not exceeding three and a half feet may be tested for the safe loads they will carry. Reënforced concrete is given particular attention on account of its universal use.

Steam Laboratory. The steam laboratory is equipped with several steam engines of various types for the study of governors, valve setting, steam consumption, indicated horse power, and brake horse power. The auxiliary equipment comprises a dead weight gauge tester, steam engine indicator, condensers, a transmission dynamometer, prony brakes, pressure and vacuum gauges, injectors, boiler feed pumps, and other minor accessories.

Hydraulic Laboratory. The hydraulic laboratory is equipped with a testing tank for three-inch centrifugal pumps, and the necessary gauges, dynamometers, and other instruments used for testing pumps and water motors.

LIBRARY.

The library is well supplied with excellent books on mathematics, machinery, surveying, water supply and sewage disposal, besides a well-selected list of good magazines on these subjects.

Course 1.—**Plane Geometry.** The general properties of plane rectilinear figures; the circle and the measurements of angles; regular polygons; solution of numerous original exercises and practical problems. Open only to students not offering geometry for entrance. Three hours credit.

Course 2.—**Solid Geometry.** Elements of solid geometry; properties and measurements of surfaces and solids. Open to all students not offering Solid Geometry for entrance. Two hours credit.

Course 3.—**Advanced Algebra.** This course is open only to those students who have not taken Algebra III in their high-school course. It includes a review of linear and quadratic equations, radicals, involution, evolution, progressions, logarithms, and imaginaries. Two hours credit.

Course 4.—**College Algebra.** Rapid review of elementary algebra; graphic representation; complex numbers; series, logarithms; theory of equations; Horner's method. Three hours credit. Prerequisite, one and one-half units of high-school algebra, and one unit of geometry.

Course 5.—**Plane Trigonometry.** The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two hours credit. Prerequisites, same as College Algebra, or course 8.

Course 6.—**Analytical Geometry.** The straight line; circle· elements of parabola, ellipse and hyperbola; polar coördinates; higher plane curves;

elements of solid analytical geometry. Five hours credit. Prerequisite, courses 4 and 5.

Course 7.—CALCULUS. Differential calculus: fundamental principles; derivatives; rates; applications to mechanics; maxima and minima; indeterminates; integral calculus: integration; definite integrals; applications to lengths, areas and volumes; moment of inertia; fluid pressure. The student is taught the use of tables of integrals in performing integrations. Five hours credit. Prerequisite, course 6.

Course 8.—INDUSTRIAL MATHEMATICS. This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks; mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; house building; power transmission; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit. Prerequisite, two units of high-school mathematics, one unit of physics, or an equivalent experience in mechanic arts.

Course 12.—DESCRIPTIVE GEOMETRY. Solution of problems relating to geometrical magnitudes in space and their representations by drawings. Execution of a large number of original exercises. Two class periods and two drafting periods per week. Three hours credit. Prerequisite, Plane and Solid Geometry.

Course 15.—ELEMENTARY SURVEYING. A brief course in the use of surveyors' instruments; laying out of walks, drives, ditches, and buildings; calculation of cuts and fills; elements of land surveying. Prerequisite, Plane Trigonometry. Two or three hours credit.

Course 16.—MINE SURVEYING. Instruments and methods used for underground traverse and connection surveys; shaft plumbing and special problems. Field work includes the survey of tunnels under constructed from the data obtained. Prerequisite, Elementary Surveying. Two hours credit.

Course 17.—TOPOGRAPHICAL SURVEYING. Practice in taking topography by transit and stadia, triangulation, measurement of base lines. A topographical survey of an area is made and the resulting contour map constructed from the data obtained. Prerequisite, Elementary Surveying. Two hours credit.

Course 18.—RAILROAD SURVEYING. A study of the methods used in laying out and constructing railways, with field practice sufficient to familiarize the student with these operations; calculation of waterways; laying out of bridges, turnouts, and easement curves. Prerequisite, Elementary Surveying. Two hours credit.

Course 19.—STRENGTH OF MATERIALS. A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shafting and reënforced concrete, resilience of materials. Two hours credit.

Course 20.—MECHANISM. A study of the motion of machine parts and of methods of transmission of motion by means of links, belts, gears, and cams. This work is related closely to the machine motions used in the steam engine and various shop machines. Two hours credit.

Course 21.—MACHINE DESIGN. Solution of problems in the design of general machine parts, including cylinders, plates, springs, riveted joints, bearings, shafts, gears, pulleys, and belts. Lectures, recitations, and drawing. Prerequisite, Strength of Materials. Two hours credit.

Course 22.—SANITATION AND WATER SUPPLY. A study of the problems of water supply for rural homes and cities, with special reference to the cities of Kansas; purification of water; types of water systems, sewer systems and sewage disposal. Lectures and inspection trips. Two hours credit.

Course 23.—ELEMENTARY STEAM POWER PLANTS. A brief study of the general problems of steam power generation; fuels, combustion and steam generation; a study of boiler and engine types; engine mechanisms and power plant auxiliaries; laboratory practice in testing of steam machinery. Three hours credit.

Course 24.—THERMODYNAMICS. The relation between heat and mechanical energy; theory of heat engines; the action of vapors under the influence of heat and pressure. Two hours credit.

Course 25.—STEAM TURBINES. A special study of the different types of steam turbines with the auxiliary apparatus used with them. Inspection trips to the power plants using these different types of turbines.

Course 26.—HYDRAULICS. The study of the laws governing the action of liquids in pipes and their flow through pipes and over weirs. The types of pumping and hydraulic power machinery with special reference to the uses of pumps in removing water from mines. Three hours credit.

Course 27.—REFRIGERATION. A study of the construction and operation of the principal types of refrigerating machinery as used in cold-storage plants and in the manufacture of artificial ice. Inspection trips to plants using these types of machinery. Two hours credit.

Course 28.—SEWERS, ROADS AND PAVEMENTS. An elementary course in the design and construction of sewers and storm drains. The collection and distribution of water supplies, with more detailed discussions of the apparatus used in purifying water and sewage. Two hours credit.

Course 51.—ADVANCED CALCULUS. This course is intended for those who wish a better knowledge of calculus. It includes center of gravity; moments of inertia; center and radius of curvature; series; expansion of functions; successive and partial differentiation and integration; differential equations; hyperbolic functions; solution of higher equations; miscellaneous practical applications. Three hours credit. Prerequisite, course 7.

Course 54.—THEORETICAL AND APPLIED MECHANICS. A study of the laws of statics and dynamics; action of forces upon bodies and the resultant motions; centers of gravity; moments of inertia; work and energy; impulse; momentum and impact; friction and lubrication; centrifugal force and the balancing of machines: Three hours credit. Prerequisite, course 6.

Course 55.—GRAPHIC STATICS. The properties of equilibrium polygons and other methods of representing the actions of forces, with application to the determination of stresses in beams, trusses, and arches. Two hours credit. Prerequisite, Strength of Materials.

Course 56.—MECHANICS OF MATERIALS. Elastic and ultimate strength; materials of engineering; theory of beams and columns; torsion of shafts; resilience and work; impact and fatigue; design of cylinders, plates, and riveted joints; testing of materials. Three hours credit. Prerequisite, differential and integral calculus.

Department of Chemical and Physical Sciences.

J. A. YATES, Professor.
G. V. EMERY, Associate Professor.
W. R. CLEVELAND, Associate Professor.
W. H. MATTHEWS, Assistant Professor.
TOBIAS ZIEGLER, Assistant in Electrical Laboratory.

This department directs the work of the industrial electrical engineering course and industrial mining engineering course. It offers the larger part of the work required in these courses, also much of the work required in the other engineering courses. The department also directs the vocational courses for electricians, miners and telegraphers, since the work required of these courses is so closely connected with like engineering courses. These courses are the outgrowth of the different practical courses given in chemistry, geology and physics, supplemented with like work given by other departments of the institution.

The location of the institution, at the center of the mining and other industrial activities of Kansas, offers many opportunities for those who complete these practical courses to become acquainted with the employers, and thus secure positions in the mines and electrical industries of our state. The students will be taken on inspection trips, which will enable them to study the different phases of the work which they will be required to do in actual practice. The practical side of the work is stressed, so that the student is enabled to connect the work which he is called upon to do in the classroom with its application in industrial work. The use of electricity is constantly increasing, on account of its cheapness and convenience, thus causing an increasing demand for electrical workers. Students are helped and urged to secure positions along the line of their work during vacations, so that they get experience in the profession they are to follow. The proper installation, care and repair of electrical machinery and electrical appliances, which are being so universally used in all our industrial activities, demand skilled men who know the "why" and "how" in this line of work. The idea in each course is to bring to the worker the best ideas and the most economical way that is known by which his task may be accomplished. Stress is placed upon acquiring the ability to do a job quickly, thoroughly, and in a scientific way.

CHEMISTRY.

Course 1.—CHEMISTRY. In this course the student becomes acquainted with the different materials and elements that are used in every industry. He studies the principles involved in the transformation of the different substances with which he works. Applications of the principles of this fundamental science in all phases of work are stressed. Due emphasis is placed upon the applications of these principles to the different lines of trade or profession in which the student is engaged. Subjects included in this course are the gases, as oxygen, nitrogen, carbon dioxide, together with a description of the common metals, how they rust, protection of same; in a word, the chemical processes involved in converting raw material into finished products. Other subjects, as the study of acids, oils, paints, salts, etc., will be considered in a practica way in this course. Laboratory fee for material used. Five hours credit

Course 2.—INORGANIC CHEMISTRY. This course is built upon a course in elementary chemistry, and consists of lectures and recitations upon the more difficult principles involved in general chemistry, including such subjects as gas laws, the solution of chemical examples, nomenclature, principles of solution, etc. The application of chemistry to the varied needs of man is emphasized. Laboratory fee for material used. Four or five hours credit.

Course 3.—QUALITATIVE ANALYSIS. This course consists largely of laboratory work. Emphasis is placed upon the analysis and properties of those substances that are used in the industrial arts, as oils, pigments, paints, varnishes, fuels, and alloys. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Laboratory fee for material used. Three or five hours credit.

Course 4.—QUANTITATIVE ANALYSIS. This is principally a laboratory course, including both gravimetric and volumetric analysis, supplemented by lectures and recitations. The calibration of glassware and the study of the relation of chemistry to other sciences, along with the various vocations of life, are included in this course. Prerequisite, Chemistry 3. Laboratory fee for material used. Three or five hours credit.

Course 16.—ELEMENTS OF MINING. This is a general course involving the principles which are employed in prospecting, location and sinking a shaft, cribbing, timbering, lighting, shot firing, underground methods of working both metal and coal mines. Three hours credit.

Course 17.—COAL MINING. This course includes a careful study of ventilation, haulage, and machinery used in coal mining. Three hours credit.

Course 18.—MINE GASES AND VENTILATION. A beginning course in the study of gases found in mines. The properties and tests for these gases will be thoroughly studied. These gases will be prepared in the classroom and various tests for them made. The safety lamp will be thoroughly studied and its use in testing for the gases found in the mine. The origin and removal of the gases will receive attention. No effort will be spared in teaching the students in this course the practical side of this work. In ventilation the student will be taught how to get the necessary data and how to find the quality of air in a mine, how to keep the quality of the air supply in the mine in proper healthful condition, also how to make the necessary measurements and calculations for the proper ventilation of mines. Two hours credit.

Course 19.—EXPLOSIVES. This course deals with the explosives used in mining, their proper care and attention. The chemistry of explosives is studied in a practical way; also the causes that lead to explosions and how these accidents may be avoided is carefully considered. In all these courses opportunity will be given for questions and discussions in order to find the best way to do the work in hand, and also to avoid accidents. The different methods of mining will receive their share of attention. Two hours credit.

Course 20.—MINING ENGINEERING. This course includes a study of the geological conditions affecting mine operations, making and reading mine maps, a study of the problems that arise in selecting the power to be used in mining, also the problems involved in transportation and operation of the mine. Two hours credit.

Course 51.—ORGANIC CHEMISTRY. A general course in organic chemistry, including lectures, recitations and laboratory work. This course emphasizes the properties and uses of the organic compounds found in our industrial activities, together with the underlying chemical principles involved. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

Course 52.—PHYSICAL CHEMISTRY. This course consists of lectures, recitations, readings and laboratory work. The elementary principles of physical chemistry are studied in this course. Emphasis is placed upon a thorough understanding of the laws involved in general chemistry. The basic nature of these principles to the historical development of chemistry is considered. The aim is to lay a solid foundation for future work in the subject. Prerequisite, Chemistry 1, 2, 3, and 4. Five hours credit.

Course 58.—TESTING OF OILS. This course includes the usual chemical tests for the examination of the various fuel and lubricating oils used in our industries. The overpoint, end-point, and flash and fire point, together with viscosity and friction coefficients, are studied. Laboratory fee for material used. Two hours credit.

GEOLOGY.

Course 40.—MINERALOGY. This is a brief course in the study of our common rocks and minerals. Easy physical and chemical tests for identification, together with crystal structure, are studied. The relation of the different types of soil and water as found in our state to that of the geological formations is emphasized. Two hours credit.

Course 41.—GEOLOGY This course includes the study of the natural materials that are used in various industrial activities, their identification, manufacture and use. Such subjects as the distribution and supply of fuel and road-building materials are studied in this course. Three hours credit.

PHYSICS.

Course 22.—HEATING AND VENTILATION. The principles of operation underlying the various modern systems of heating and ventilation installed in homes and school buildings form the basis of this course. It includes practical problems in the designing of heating and ventilating systems for buildings. Prerequisite, high-school physics. Two hours credit.

Course 23.—ELECTRIC WIRING. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Two or four hours credit.

Course 24.—ILLUMINATION. A practical course in the designing of illumination distribution for all purposes—home, school, business house, and street lighting. It includes a study of the various types of light sources, shades, and reflectors and their adaptability for various classes of service. Prerequisite, course 23. Two hours credit.

Course 25.—GAS ENGINES. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics, industrial activities, or in automobiles. Laboratory and lectures. Prerequisite, high-school physics. Three hours credit.

Course 26.—GAS ENGINE ELECTRICITY. A companion course to course 25. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts. Prerequisite, high-school physics. Two hours credit.

Course 27.—ARMATURE WINDING. A practical course in the testing and repairing of defective and burned-out electrical machinery. Prerequisite, course 33. Two hours credit.

Course 29.—ELECTRICAL INSTALLATIONS. The purpose of this course is the careful study of installation of dynamos and switchboards, together with the connection of the generators with the source of power, and the switchboard with its connection with the transmission wires. This is a very important course, dealing not only with the installation of the larger generators, but also the location and operation of motors of different sizes connected therewith. Two hours credit.

Course 30.—GENERAL PHYSICS. Designed for those who wish a brief course in college physics and who have not had high-school physics. This course is preparatory to other courses in physics and is required of students who have not had a unit of high-school physics or its equivalent. It includes a rapid survey of all the branches of physics, interspersed with demonstrations and laboratory exercises. Five hours credit.

Course 31.—MECHANICS AND HEAT. This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in building, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, high-school physics. Four hours credit.

Course 32.—SOUND AND LIGHT. Lectures and laboratory work in the general theory of sound and light. This course with courses 31 and 33 constitute the equivalent of a one-year course in college physics. Prerequisite, course 31. Two hours credit.

Course 33.—ELECTRICITY AND MAGNETISM. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment, rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, high-school physics. Four hours credit.

Course 34.—ELECTRICAL MEASUREMENTS. Lectures and laboratory. Includes meter testing; the measurement of temperature coefficient of resistance; specific resistance of copper, iron, aluminum, etc.; the electrolysis measurement of copper; testing of iron for hysteresis and its measurement; the measuring capacity, inductance and earth's magnetic field; telephone line measurements; and wireless equipment measurement. Three hours credit.

Course 35.—DIRECT-CURRENT MACHINERY. Lectures and design. The theory of direct-current machine construction. Includes the theory of magnet design, both shunt and series and armature design. Two practical problems are given, one the design of a lifting electro-magnet, and the other the design of a direct-current motor. Two hours credit.

Course 36.—ALTERNATING-CURRENT MACHINERY. Lectures, design and laboratory. Advanced alternating-current machinery and alternating-current machine design. Some of the higher problems of alternating-current machinery are taken up in this course, such as alternating-current transmission line calculations and inductive interference in alternating-current transmission lines, transfer men regulations, alternating-current generator, voltage regulators, etc.

A problem in the design of an alternating-current machine, either transformer, generator or motor, will be solved. Four hours credit.

Course 37.—Storage Batteries. The construction and operation of storage batteries is carefully studied. The charging of storage batteries receives special attention. The problems of repair are also considered. Storage batteries are being used more and more in electrical work, and the proper use and repair of them is of great importance to electrical workers in the fields where batteries are used. Two hours credit.

ELECTRICAL LABORATORY EQUIPMENT.

Number.	
2	0-125 A. C. Weston voltmeters.
1	0-300 A. C. Weston voltmeters.
1	0-75 A. C. Weston voltmeters.
1	0-30 A. C. Weston voltmeters.
1	0-100 A. C. Weston ammeter.
1	0-15 A. C. Weston ammeter.
1	0-5 A. C. Weston ammeter.
1	0-2 A. C. Weston ammeter.
1	0-2.5-25 D. C. Weston ammeter.
1	0-15-3-30 D. C. Weston ammeter.
1	0-3-30-300 D. C. Weston voltmeter.
1	0-10 D. C. Student ammeter-voltmeter.
1	0-7 hot wire ammeter.
2	1-kw. indicating wattmeters.
2	Sangamo induction watthour meters.
2	Wall galvanometers.
6	Table galvanometers.
1	Post-office bridge.
2	Slide wire bridges.
1	Standard inductance.
4	Standard resistance boxes.
2	Standard condensers.
1	Standard cell (Weston Cadmium).
1	Magnetometer.
1	High insulation discharge key.
2	½ H. P. G. E. repulsion induction motors.
1	1 H. P. G. E. 3-phase induction motor.
1	¾ H. P. D. C. Diehl dynamo.
1	10-kw. motor-generator set.
4	Ignition magnetos.
15	D. C. armatures.
2	Bell transformers.
3	Maloney transformers, 1 kw., 220-110 55.
3	Current transformers.
1	1-kw. wireless transformer, 110-10,000 volts.
5	Edison storage batteries.
4	6-volt, 40-ampere-hour lead storage batteries.
4	2-volt lead storage batteries.
2	12-volt lead storage batteries.
1	Starting rheostat for D. C. motor.
1	Oxygen-natural gas lead burning outfit.
1	2-kw. self-exciting A. C. generator.

English.

Miss Owen, Professor.

Course 1.—Constructive English. The formal side of English, both written and spoken. A study of the paragraph of sentence forms, of punctuation, letter writing and formal notes. The entire course correlated with a study of American Classics and the late war literature. Four hours credit. Open to freshmen.

Foreign Languages.

SAMUEL J. PEASE, Professor.
ERNEST BENNETT, Assistant Professor.

FRENCH.

Course 1.—ELEMENTARY. Fraser and Squair's French Grammar, Part I, and Reader, and about 100 additional pages of easy reading. Emphasis on verbs and pronouns. Phonetics after the LeDaum method. Composition. Conversation daily. Five hours credit.

Course 2.—INTERMEDIATE. Fraser and Squair, continued. Modern narrative prose and one easy play. Written exercises, conversation, dictation; introduction to French life. Five hours credit.

GERMAN.

Course 1.—ELEMENTARY. Bagster-Collins: First Book in German, lessons I to XXV; Bacon's Vorwaerts. Conducted mainly in German, but with frequent translation into English. Emphasis on forms and agreement. Five hours credit.

Course 2.—INTERMEDIATE. Bagster-Collins completed. Reading of one simple play and about 200 pages of simple prose and poetry. Memorizing of songs and poems. Free reproduction of anecdotes, poems, and stories. Five hours credit.

SPANISH.

Course 1.—ELEMENTARY. Hills and Ford's First Spanish Course, Bergé-Soler and Hatheway's Spanish-American Reader. Forms and syntax; practice in speaking and writing. Five hours credit.

Course 2.—INTERMEDIATE. Hills and Ford, completed. Extensive reading and conversation. Idioms and subjunctives emphasized. Five hours credit.

Physical Education.

G. W. WEEDE, Director for Men.
PAUL J. ALYEA, Assistant Director.

Course 1.—FRESHMAN YEAR First semester. Three hours a week. One hour credit. This course is of a body-building nature. During the fall when the weather permits this course is carried on outdoors, and consists for the most part of a study and practical application of outdoor games. Beginning about December 1 the work consists of the following:

(*a*) FREE CALISTHENICS: Exercises are selected for their different effects upon the bodily organism and are arranged with the idea of progression. They involve the hygiene or body-building work, educative movements and corrective or remedial exercises.

(*b*) LIGHT APPARATUS: Training is given in the use of Indian clubs, dumb-bells, wands, etc.

(*c*) HEAVY APPARATUS: Graded exercises are given in parallel bars, vaulting bars, horses, horizontal bars, traveling and flying rings, etc.

(*d*) INDOOR ATHLETICS AND GAMES. In this will be outlined indoor track meets, basket ball, indoor baseball, volley ball, etc.

Course 2.—FRESHMAN YEAR. Second semester. Three hours a week. One hour credit. This course is a continuation of course 1. Baseball, tennis and track and field athletics are given as soon as weather conditions permit outdoor work.

Shop Work.

F. H. Dickinson, Assistant Professor.
H. T. James, Instructor in Machine Shop Practice.

Course 1.—Pattern Making. Consists of instruction in the use and care of lathe and tools, and in making a series of problems which give familiarity with the principles involved in both turning and pattern making.

The student is taught the meaning and necessity of draft; the use of core prints, and making of core boxes; shrinkage of iron and other metals; its effect on different shapes and thicknesses of castings; how to join lumber to prevent warping and shrinkage of patterns; the use of segmental work; the meaning of such terms as fillet, boss, flange, rib, web, etc. Lectures and demonstrations will occur at frequent intervals.

Foundry. A course in which the simpler problems of foundry practice are studied, including green dry sand and cored work, the use of the brass furnace and cupola.

Forging. This course includes the care of the fire, selection of coal and the making of coke; proper use of tools; heats for the working of different materials; exercises in drawing out and upsetting; the making of welds; practice in bending and forming. Two hours credit.

Machine-shop Practice. Elementary work in chipping, filing, fitting, and practical experience in operating the more common machine tools. Two hours credit.

Drafting.

C. R. Wasser, Assistant Professor.

Course 1*a*.—Mechanical Drawing. Proficiency in the use of drafting instruments, knowledge of the conventions and methods of drafting-room practice, an understanding of projection and working drawings through the making of a series of working drawings. Lettering exercises, both capitals and lower case. Directions for sharpening the pencil and laying out the sheet. Line conventions; use and care of the ruling pen. Geometrical constructions include lines, angles, polygons, circles and tangents. Orthographic projection study of first and third angle. Projection of line point and solids on planes. Each problem begins with the making of a sketch in pencil and then a penciled working drawing, followed by an inked tracing and a blue print. Two hours credit.

Course 2.—Elementary Machine Drawing. A study of standard bolts, nuts, screws, keys and pins with their standard conventions. Use of tables and machinist and engineer hand books. Drawing of machine parts such as hand wheels, eccentric sheave, engine crank, connecting rod end, crane hook, clutch coupling, piston rod stuffing box, etc. Execution of working sketch of casting on regular cross-section paper, followed by working, tracing and blue print.

Study of cam motions and simple elementary gearing. Prerequisite, courses 1 and 2. Two hours credit.

Vocational Courses.

These courses are planned to give the student, in the shortest time possible, the knowledge and manual preparation which are essential to the skilled worker. The student leaves out all preliminary studies, once thought so essential, and goes at once to the study of the work he has chosen to do. He masters the "why" as he learns the manipulation. He is allowed to advance as rapidly as his ability permits. The working conditions are made as nearly like those in real working experience as is possible to make them. Emphasis is placed upon acquiring that skill and ability which will enable him to do quickly and thoroughly the service which he is to be employed to do.

These courses are designed for those who are already workers in the vocation and who wish to become more proficient, and thus do more and a better class of work; also for those who wish to prepare themselves to enter their chosen field.

A certificate is given at the completion of any course, showing the work accomplished, and at the completion of all the divisions of the course a diploma, stating such completion, is given.

Vocational courses include courses for miners, steam engineers, electrical workers, and telegraphers.

Electricians' Course.

The work offered in this vocation consists of a number of courses. The completion of any one leads to a certificate showing that the work has been completed for that course. The completion of all the courses outlined below leads to a certificate showing the completion of the entire course, and is designed to give one a general working knowledge of electricity.

The purpose of this course is to train young or mature men in the different lines of electrical work, so that they may fill the different positions in our various industries requiring a knowledge of electrical work. There are many men who have not had opportunity for the educational training necessary for an electrical engineer, but who desire to be able to do well some line of electrical work. This course is planned for that type of men.

VOCATIONAL COURSE FOR ELECTRICIANS.

FIRST YEAR.

First Semester:	*Units.*	*Second Semester:*	*Units.*
Electrical Wiring	¼	Practical Mathematics	½
Electrical Installations	¼	Generators and Motors	½
Armature Winding	¼	Mechanical Drawing	¼
Power Transmission	¼	Storage Batteries	¼
Practical Mathematics	½	Auto Electricity	¼
Related Science	½	Electrical Signs	¼
Carpentry	¼	Telegraph and Telephone	½
Mechanical Drawing	¼		
	2½		2½

A Course for Miners.

This is a practical course for all who are interested in mining. The information contained is essential to operator, manager, superintendent, foreman, fire boss or digger. It is essential that the men who are engaged in this extremely important industry know thoroughly the very best methods of operation and the safest and most economic way to get the coal to the surface. A complete understanding and practice of the science involved in this work will greatly lessen the accidents which occur in our Kansas mines, give the men underground better working conditions, purer air to breathe and less liability to accident.

Emphasis is placed upon the practical side of the work—"Use the head as well as the muscle." The course includes the following: Courses in mine gases and ventilation, timbering, explosives and haulage, together with the mathematics and sciences involved in the work of the miners and those directly engaged in this industry.

VOCATIONAL COURSE FOR MINERS.

First Semester:	*Units.*	*Second Semester:*	*Units.*
Mine Gases	⅛	Mine Machinery	¼
Safety Lamps	⅛	Geology	⅛
Practical Mathematics	½	Practical Mathematics	½
Related Science	½	Generators and Motors	½
English Composition	½	Hoisting and Haulage	¼
Mine Ventilation	¼	Timbering	⅛
Carpentry	¼	Forging and Bench Metal	¼
Mechanical Drawing	¼	Mechanical Drawing	¼
		Preparing Shots	⅛
		Mine Lighting	⅛
	2½		2½

Stationary Engineering.

This course is designed for men who have had experience as oilers, firemen and assistant engineers, who want to qualify themselves to pass examinations for an engineer's certificate to run portable and hoisting engines or stationary plants. The practical engineer will also find much that is valuable to him in the lectures and discussions on the design and operation of engines and boilers. A fair knowledge of practical mathematics is necessary to successfully complete this course, and men who are not sufficiently trained in this important subject should study it along with the other subjects.

A certificate is given at the completion of any one subject, these being statements that the student was in attendance while the subject was being given, and that his work was satisfactory.

A diploma in steam engineering is given at the completion of the entire group of subjects.

VOCATIONAL COURSE FOR STATIONARY ENGINEERS.

First Semester:	*Units.*	*Second Semester:*	*Units.*
Practical Mathematics	½	Practical Mathematics	½
Steam Boilers	¼	Steam Turbines	¼
Steam Engines	¼	Pumping Machinery	¼
Related Science	½	Gas Engines	¼
English Composition	½	Electric Wiring	¼
Carpentry	¼	Generators and Motors	½
Mechanical Drawing	¼	Forging and Bench Metal	¼
		Mechanical Drawing	¼
	2½		2½

Department of Chemical and Physical Sciences.

Course 1.—GASES. This course includes the careful study of the different gases found in mines. The composition and properties of the gases are thoroughly studied. The tests and means employed for identifying the different gases found in mines, together with the effect those have on men working in the mines, is included in this course. Eight lessons will be needed to complete the course unless one is somewhat familiar with these gases before beginning the course. Credit, ⅛ unit.

Course 2.—SAFETY LAMPS. This course includes careful study of the construction of different kinds of lamps. The scientific principles involved in the construction of the safety lamp, together with its proper use, are carefully studied. At least four lessons will be required to complete this course unless one is quite familiar with safety lamps. Credit, ⅛ unit.

Course 3.—MINE VENTILATION. This course includes the study of mine ventilation and the various systems in common use in coal mines. Twelve lessons will be required to complete the course unless one has already made a careful study of this important subject. No subject is of greater importance to the miners than proper ventilation. Credit, ¼ unit.

Course 4.—RELATED SCIENCE. This course consists of a study of the foundation principles of physics and chemistry as related to the vocational line pursued by the student. The course includes both textbook and laboratory work in such subjects as oxygen, nitrogen, carbon dioxide, carbon monoxide and such other chemical principles as are involved in the vocation. Such principles of physics are involved in the vocational work as the simple principles of machines, hydraulics, heat, etc. Credit, one-half unit.

Course 6.—MINE LIGHTING. This course includes a study of the different systems used in the lighting of the mines. The advantages and disadvantages of the different systems are studied. The cost of operation is also considered. Credit, one-eighth unit.

Course 7.—GEOLOGY. A course dealing with the strata above and below the coal; fissures, faults, horsebacks and slopes, the composition and physical properties of the strata overlying the coal. This course is given to prepare for the course in timbering. Credit, one-eighth unit.

Course 8.—TIMBERING MINES. Six lessons will be needed to complete this course. Many of the accidents that occur in our mines might be avoided by proper timbering. The different ways of testing the roof and the proper placing of props are thoroughly studied in this course. Credit, one-eighth unit.

Course 9.—PREPARING SHOTS. A study of the state laws that apply to shot preparation, the strength of different grades of powder and the conditions under which different grades of explosives should be used. A study of the most efficient powder used in blasting coal where the top and bottom are smooth, where rolls exist in the top or bottom and the preparation of the shot for the best results. The explosives to use and the preparation of shots in sinking, in horsebacks and brushing. This course will also deal in the chemical and physical tests of powders as used in the different powder manufacturing plants. Credit, one-eighth unit.

Course 10.—MINE MACHINERY. Six lessons will be needed to complete this course, which includes a study of ventilating fans, water pumps, trams, hoisters and electrical motor machinery. This course will also include the study of the principles of "safety first" as applied to the use of all machinery. Credit, one-fourth unit.

Course 11.—GENERATORS AND MOTORS. The mechanism of dynamos and motors is studied from the laboratory standpoint. The study of the repair and construction of dynamos and motors. One-half unit.

Course 12.—AUTOMOBILE ELECTRICITY. A companion course to course 9. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts. Credit, one-fourth unit.

Course 13.—HAULAGE. This course includes the different systems of haulage that are in use in coal mines, the laying out of tracks and switches, the sizes and kinds of mine cars, and other practical points connected with the installation and upkeep of mine roads and haulage equipments. Four lessons. Credit, one-fourth unit.

Course 2.—ARMATURE WINDING. The principles involved in the structure of an armature are studied from both text and lecture demonstrations. The fundamental principles employed in winding of both alternating-current and direct-current generators and motors are studied in this course from text, lecture demonstration, and practice work on different types of machinery. The lap and wave windings and the study of commutator construction will be stressed. The windings and connections for transformers are also studied. The study of soldering and installation, together with the size of wire used, will be made a part of this course. Credit, one-fourth unit.

Course 3.—ELECTRIC INSTALLATION. The purpose of this course is the careful study of installation of dynamos and switchboards, together with the connection of the generators with the source of power, and the switchboard with its connection with the transmission wires. This is a very important course, dealing not only with the installation of the larger generators, but also the location and operation of motors of different sizes connected therewith. Credit, one-fourth unit.

Course 4.—POWER TRANSMISSION. As the name indicates, this course deals with the transmission of electricity, from the source to the place where it is used to do work. It includes the study of the transformer, its location and connections; also, house-wiring for lights, estimating costs, and other problems connected with illumination. The designing and construction of electric signs is also studied. Credit, one-fourth unit.

Course 5.—STORAGE BATTERIES. The construction and operation of storage batteries is carefully studied. The charging of storage batteries receives careful attention. The problems of repair are also considered. Storage batteries are being used more and more in electrical work, and the proper use and repair of them is of great importance to electrical workers in the fields where batteries are used. Credit, one-fourth unit.

Course 6.—ELECTRICAL SIGNS. A study of electrical signs and the actual construction of a "sign" in the laboratory. Credit, one-fourth unit.

Course 7.—ELECTRIC WIRING. A practical course in the wiring of electrical lighting systems, appliances, and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Credit, one-fourth unit.

English.

Course 1.—ENGLISH COMPOSITION. A course in written English consisting of business and literary styles, letters, notes, and book reviews. Some attention to punctuation and form. Anything and everything, in short, that a vocational student thinks he would like to have. Credit, one-half unit.

Mathematics and Applied Mechanics.

Course 1.—PRACTICAL MATHEMATICS. A course in practical arithmetic such as is necessary in electrical or mechanical trades. Elements of algebra and geometry as applied to the formula and calculations encountered in the practical vocations. One-half unit credit.

Course 2.—PRACTICAL MATHEMATICS. A continuation of course 1 with some attention given to the use of the slide rule. Elementary mechanics as applied to mining and shop machinery. One-half unit credit.

Course 3.—STEAM BOILERS. A brief study of the operation of steam boilers, fuels, steam generation, injectors, with some laboratory practice in the testing of boiler appliances. One-fourth unit credit.

Course 4.—STEAM ENGINES An elementary course in the study of steam engines, engine mechanisms, and power-plant appliances, with laboratory work in the operation and testing of steam engines. One-fourth unit credit.

Course 5.—STEAM TURBINES. A brief study of the different types of steam turbines and the auxiliary apparatus necessary for their operation, with inspection trips to plants using steam turbines. One-fourth unit credit.

Course 6.—PUMPING MACHINERY. A course in the operation of boiler feed pumps, centrifugal pumps, and other types of pumping machinery. Laboratory work in the testing of these types of pumps will comprise part of the work of the course. One-fourth unit credit.

Extension Work.

Evening and day classes for men engaged in industrial pursuits are organized at Pittsburg and other centers wherever there is sufficient demand. Classes for miners, steam engineers, electricians, telegraphers and draftsmen have been organized and well attended. These courses will be extended to other lines of technical work as rapidly as the facilities of the institution will permit. A description of the courses now offered is given below.

A Course for Miners.

Course 1.—TECHNICAL INFORMATION. This course includes the science and mechanical principles that are related to mine occupation. The number of lessons required to complete the course depends on the previous training of the student. One who is familiar with the scientific and mechanical principles involved may complete this course in four lessons. Those who are not fairly well grounded in the above principles will need to give eight or ten lessons to this subject.

Course 2.—GASES. This course includes the careful study of the different gases found in mines. The composition and properties of the gases are thoroughly studied. The tests and means employed for identifying the different gases found in mines, together with the effect these have on men working in the mines, is included in this course. Eight lessons will be needed to complete the course unless one is somewhat familiar with these gases before beginning the course.

Course 3.—SAFETY LAMPS. This course includes careful study of the construction of different kinds of lamps. The scientific principles involved in the construction of the safety lamp, together with its proper use, are carefully studied. At least four lessons will be required to complete this course unless one is quite familiar with safety lamps.

Course 4.—MINE VENTILATION. This course includes the study of mine ventilation and the various systems in common use in coal mines. Twelve lessons will be required to complete the course unless one has already made a careful study of this important subject. No subject is of greater importance to the miners than proper ventilation.

Course 5.—TESTING APPARATUS USED IN MINES. This course includes the study of the uses of such pieces of apparatus as the anemometer, barometer, thermometer and water gauge as related to coal mines. One can complete this course in three lessons. It is quite important that men know how to use properly the apparatus upon which the proper ventilation of the mines largely depends, and to be able to make such calculations from the readings of the instruments as will enable them to know the character of the air in the mines.

Course 6.—MINE LIGHTING. This course includes a study of the different systems used in the lighting of the mines. The advantages and disadvantages of the different systems are studied. The cost of operation is also considered.

Course 7.—GEOLOGY. A course dealing with the strata above and below the coal; fissures, faults, horsebacks and slopes, the composition and physical properties of the strata overlying the coal. This course is given to prepare for the course in timbering.

Course 8.—TIMBERING MINES. Six lessons will be needed to complete this course. Many of the accidents that occur in our mines might be avoided by proper timbering. The different ways of testing the roof and the proper placing of props are thoroughly studied in this course.

Course 9.—SHOT FIRING. Three lessons will be needed to complete this course. The different kinds of explosives that are used in coal mining and the different systems of shot firing are studied. The dangers of explosives and proper handling of explosives receive attention.

Course 10.—MINE MACHINERY. Six lessons will be needed to complete this course, which includes a study of ventilating fans, water pumps, trams, hoisters and electrical motor machinery. This course will also include the study of the principles of "safety first" as applied to the use of all machinery.

Course 11.—MINE-RESCUE WORK. The course given by the United States government in mine-rescue service, or by the state mine-rescue station, complete this course.

Course 12.—STATE MINING LAW. A careful study of the state coal-mining laws, together with the duties of various mine officials, make up this course, which will require six lessons to complete it.

Course 13.—HAULAGE. This course includes the different systems of haulage that are in use in coal mines, the laying out of tracks and switches, the sizes and kinds of mine cars, and other practical points connected with the installation and upkeep of mine roads and haulage equipments. Four lessons.

Course 14.—MAPPING. This course includes the reading of a blue print so as to be able to locate definite points in a mine from a map of the mine. Two lessons.

A course in related drawing, related science, related mathematics and various shop courses will be found helpful to those who seek complete information in the subject of coal mining.

STEAM ENGINEERING.

Course 1.—ELEMENTARY STEAM POWER PLANTS. This course involves the inspection, testing, care and operation of steam plant equipment; the study of heat, its nature and effects; fuels, draft, types of boilers and the advantages of each type; boiler power of boilers; boiler accessories; types of steam engines; valve setting of the simple slide valve. This course is arranged to be given in either ten or twelve lessons, each of two hours duration.

Course 2.—ADVANCED STEAM POWER PLANT. A more advanced course in steam engines and boilers, in which principles of design are more completely considered; automatic stokers are given some attention in this course, and means of handling coal by machinery; steam turbines, compound engines, and the use of superheated steam are given considerable prominence in this class. Where it is possible inspection trips are made to some of the plants using different types of engines and boilers. The work of this course is arranged to be completed in ten to twelve lessons of two hours each.

Course 3.—STEAM LABORATORY. This is an experimental course given only at the Normal and involves the testing and manipulation of steam engines and pumping machinery. The brake horsepower and indicated horsepower of steam engines are measured by means of suitable appliances, and the setting of valves is checked by means of steam indicator diagrams. The steam consumption of engines is measured, and the efficiency of injectors and boiler feed pumps compared. This course is arranged to be completed in ten or twelve evenings of two hours each.

ELECTRICIANS' COURSE.

Course 1.—D. C. AND A. C. MACHINERY. The construction, operation and repair of dynamos and motors are carefully studied in this course. The text and lecture demonstration includes the fundamental principles involved in different types of electrical machinery. Opportunity will be offered for the student to examine and operate different types of electrical machines, make important electrical measurements, and solve problems connected therewith.

Course 2.—ARMATURE WINDING. The principles involved in the structure of an armature is studied from both text and lecture demonstrations. The fundamental principles employed in winding of both alternating-current and direct-current generators and motors are studied in this course from text, lecture demonstration, and practice work on different types of machinery. The lap and wave windings and the study of commutator construction will be stressed. The windings and connections for transformers are also studied. The study of soldering and installation, together with the size of wire used, will be made a part of this course.

Course 3.—ELECTRIC INSTALLATION. The purpose of this course is the careful study of installation of dynamos and switchboards, together with the connection of the generators with the source of power, and the switchboard with its connection with the transmission wires. This is a very important course, dealing not only with the installation of the larger generators, but also the location and operation of motors of different sizes connected therewith.

Course 4.—POWER TRANSMISSION. As the name indicates, this course deals with the transmission of electricity, from the source to the place where it is used to do work. It includes the study of the transformer, its location and connections; also, house-wiring for lights, estimating costs, and other problems connected with illumination. The designing and construction of electric signs is also studied.

Course 5.—Storage Batteries. The construction and operation of storage batteries is carefully studied. The charging of storage batteries receives careful attention. The problems of repair are also considered. Storage batteries are being used more and more in electrical work, and the proper use and repair of them is of great importance to electrical workers in the fields where batteries are used.

Course 6.—Electrical Signs. A study of electrical signs and the actual construction of a "sign" in the laboratory.

Course 7.—Electric Wiring. A practical course in the wiring of electrical lighting systems, appliances, and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits.

Course 8.—Electric Wiring II (Illumination). A practical course in the designing of illumination distribution for all purposes—home, school, business house, and street lighting. It includes a study of the various types of light shades and reflectors, and their adaptability for various classes of service.

Course 9.—Gas Engine. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics or in automobiles. Laboratory and lectures.

Course 10.—Automobile Electricity. A companion course to course 9. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts.

TELEGRAPHY.

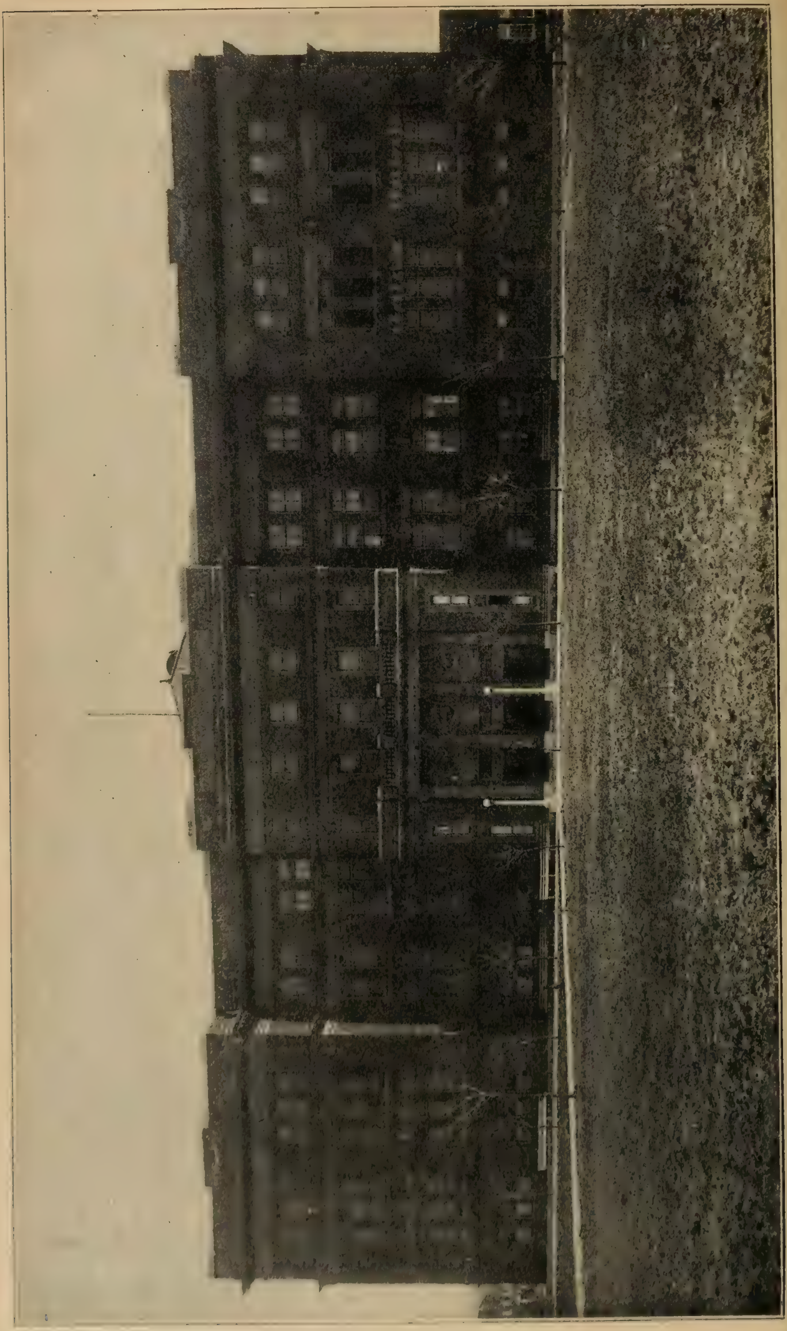
This course is intended for those desiring to become telegraph operators and others interested in different phases of this subject.

Radio. A practical course in sending and receiving messages by means of the ordinary telegraph key and buzzer. Instruction is given in the international code, and is intended to help the student for service in the signal corps of the United States army, or in any commercial field where wireless telegraphy is needed. The student is advised to take typewriting in connection with this course, so that the messages may be received and typed at the same time. Opportunity is given the student to practice sending and receiving messages.

Morse Telegraphy. A course is also given in American Morse code for both young men and young women wishing to qualify themselves for positions in railroad and commercial service. A student who will apply himself can in a short time learn to send and receive telegraphic messages. The student is advised to study typewriting in connection with this course, and arrangement is made for so doing, so that one may learn to receive and type a telegraphic message at the same time. The student is urged to advance as rapidly as possible, which greatly depends on his application and ability to grasp the subject.

FUEL CONSERVATION.

This course is for firemen and those interested in the economic and smokeless combustion of coal. The course is designed to give such information to those who burn coal as to make them use it most economically. A study of the ash, smoke and combustible gases as very commonly seen in all our heating and industrial plants will show that there is a considerable percent of waste of coal. A thorough knowledge of the combustion of the coal used and the principles of combustion employed will enable those who use coal to get the largest possible number of heat units therefrom. Lectures and suggested readings, together with demonstrations to illustrate the principles involved, are given. It is expected that those who take the course will find its application in the work they have to perform, and the hope is that by use of the principles of chemistry employed the man will be able, through the use of his head as well as his hands, to obtain the highest possible results.



RUSS HALL.
ADMINISTRATION BUILDING AND COLLEGE OF LIBERAL ARTS.

SECTION VII.

Summer Session.

Summer Session Calendar, 1920.

Monday, June 7, Enrollment.
Tuesday, June 8, Class work begins.
Friday, August 6, First session of summer school closes.
Monday, August 9, Second term summer session opens.
Friday, September 3, Second term summer session closes.

State Board of Administration.

Gov. Henry J. Allen, Chairman.
Dr. Wilbur N. Mason. Hon. H. J. Penney. Hon. E. L. Barrier.
Hon. James A. Kimball, Business Manager.
C. W. Myers, Assistant Business Manager.
E. B. Cronemeyer, Assistant Business Manager.
Malcolm M. Gray, Secretary.

General Information.

The 1920 Summer Session of the State Manual Training Normal School opens June 7 and closes August 6. The growth of the State Manual Training Normal School in importance and favor with teachers has been remarkable. Approximately 1,800 teachers attended the Summer Session last year. We predict an increased attendance for 1920. The rapid growth and manifest interest in the Summer Session is the best evidence that teachers are appreciating the opportunity afforded them by means of the Summer Session for increasing their efficiency; working out their degrees, life diplomas, or securing the three-year or one-year state certificates, and the certificates for special subjects: Music, drawing, agriculture, home economics, commerce, industrial and applied arts, and other occupational subjects.

At the present time the country is confronted with a somewhat alarming condition—a condition respecting a shortage of teachers for the public schools. The demand for teachers during the past year in all lines has far exceeded the available supply. The opportunity for good positions afforded teachers at the present time is certainly great. Indeed, the inducements held out to teachers for increasing their efficiency are attractive.

Ten regular members of our faculty, each a specialist from a standpoint of both educational preparation and practical experience, give their entire time to the Department of Industrial and Applied Arts. (See courses offered.) Eight skilled and experienced instructors devote their entire time to the Department of Household Economics. In addition to these extensive departments offering courses leading to the degree, the following departments also offer courses leading to the degree: biology, English, history, mathematics, chemical and physical sciences, education, and the languages.

GENERAL COURSE.

Special attention is called to the course known as the "general course" —a course with sufficient flexibility to be especially adaptable to students desiring to make preparation for general high-school teaching.

Two-year courses leading to the life diploma or special certificate are offered in the following: rural teachers, kindergarten teachers, primary teachers, intermediate teachers, grade teachers, commercial teachers, agriculture, drawing supervision, music supervision, industrial arts, household economics, public speaking, physical education, and industrial physics.

Reviews for beginning classes are conducted in every subject required for county teachers' certificates. Examinations are held at the institution at the close of each month for county certificates.

The one dominant policy of the State Manual Training Normal School is that vital and practical relating of the so-called cultural or academic subjects to the industrial or vocational subjects. We doubt if in any teacher's college greater opportunity is afforded the teacher during his or her period of preparation, even in strictly academic lines of study, to come into as close contact with the content and method of industrial and vocational training, and thereby discover the way for making the more practical application of academic subjects. This educational policy and the success of its application is meeting a long-felt and specific demand in present-day educational trend.

For the Summer Session the regular faculty will be supplemented by several additional instructors—men and women selected for special fitness along certain lines.

One of the most enjoyable and profitable features of our Summer Session has been the array of splendid talent secured from year to year for special lectures and conferences. The Summer Session of 1919 will be no exception to the past.

SPECIAL FEATURES.

We are planning three or four special educational and entertaining features for the Summer School students this session. We are not quite in a position to announce these, but you may rest assured that they will be of the highest character. In addition to these, special lectures of the very best that can be secured will appear during our Summer School, and thereby bring to the Summer Session one of the largest and best special programs that we have ever offered, or that will be offered anywhere in the West.

STANDING.

The State Manual Training Normal School is a fully accredited teacher's college, with membership in the North Central Association of Colleges and Universities. This affiliated standing is of material advantage to students who wish to transfer to other institutions, or to enter other colleges or universities for graduate study. The life diplomas and degrees of the institution are being accepted as state certificates in practically every state in the Union, at least wherever a state accepts a degree or diploma from an institution in lieu of a state certificate.

FEES.

No tuition is charged teachers who are residents of the state of Kansas. An incidental fee of $7 is charged each student who enters the institution for the Summer Session; also a hospital fee of $1 is charged each student, except in cases where a student has paid the $1 hospital fee during the preceding regular year. Persons not residing in Kansas are charged $10 in addition to the above incidental and hospital fees. Assessments are made for materials actually used in certain departments.

Splendid rooming facilities are available in easy walking distance of the institution, at rates ranging from 75 cents to $1.50 per week.

EXPENSES.

Excellent table board may be had at $4 to $6 per week in private families or in groups.

A cafeteria is operated under the management of the College where meals and lunches are served at approximate cost, ranging from $3.50 to $4 per week.

Many teachers find it both pleasant and profitable to take a cottage or suite of rooms, do light housekeeping, and lunch at the cafeteria. By this method the cost of meals may be reduced to a minimum.

THE CREDIT HOUR.

For each credit hour of any course in the College the student is expected to devote himself for three hours either in the classroom, laboratory, or outside preparation.

DIPLOMAS AND CERTIFICATES.

ONE-YEAR STATE CERTIFICATE. Students completing the Normal High School professional course are entitled to a one-year state certificate. Regular high-school graduates who have attended the State Manual Training Normal School one-half semester and completed eight college hours of work, six of which are professional, are entitled to one-year state certificate.

THREE-YEAR STATE CERTIFICATE. Students who have attended the State Manual Training Normal School one semester and completed thirty-two hours of college work, eight of which are professional, are entitled to a three-year state certificate.

LIFE CERTIFICATE.

Students who have attended the State Manual Training Normal School one semester, and who have met the requirements of the first two years of any of the college courses—which must include English, or public speaking, 4 hours; physical education, 2 hours; professional, 14 hours—are entitled to a life certificate for elementary two-year and junior high schools.

DEGREES.

Students who have attended the State Manual Training Normal School for one year, and who have completed any of the four-year college courses, including at least 8 hours of professional work in addition to that required for the life diploma, chosen from junior and senior subjects, will be admitted to the degree of bachelor of science in education, which degree is a life certificate to teach in any elementary or high school in the state of Kansas.

At least one-third of the major must be selected from the junior and senior subjects.

No student may offer for the degree more than 20 hours in any subject in which a major is not offered.

No more than 8 hours of commerce will be accepted toward a degree.

SPECIAL CERTIFICATES.

Those desiring to teach the following subjects: Industrial arts, agriculture and home economics, will be issued a special certificate authorizing them to teach such subject or subjects upon completion of special courses hereinafter outlined in the catalogue, each of which must embrace the following: major subjects 24, minor subjects 12, education 14, physical education, 2, elective, 10.

By major is meant credit hours upon subjects which represent the particular department in which the candidate wishes certification to teach.

By minor is meant credit hours in subjects from any other department in which candidate is not necessarily specializing, but which he chooses as his second preference, such arrangement being made to accommodate those who may desire or be required to teach subjects outside of their department.

In cases where candidates desire to be certificated to teach a minor subject or subjects, the 12 hours designated for such subjects may be considered elective, and may be chosen from any subjects in accordance with courses catalogued.

Special certificates in industrial arts and home economics will be issued for a period of three years, and may be renewed by any normal school in Kansas for a period of three years, provided 30 additional hours of college work have been completed, of which 16 hours at least must have been selected from that department in which specialization is being made. The special certificate may be renewed a second time only upon the completion of 30 additional hours of college work, and instead of a special certificate the candidate will then have completed his full college course, and will be issued the regular bachelor of science degree in education, which will authorize him to teach any subject or subjects in any of the public schools of Kansas for life.

SPECIAL LIFE DIPLOMA.

Those desiring to teach the following subjects: Music, drawing, physical education and commerce, in the senior or four-year high schools, will be issued the special diploma upon the completion of such courses as are outlined in the General Catalogue.

LIFE CERTIFICATE.

KINDERGARTEN CERTIFICATES. On completion of the kindergarten course—a course of two years, presupposing high-school graduation or its equivalent—a diploma is issued which, in accordance with a law passed by the legislature of 1907, is a certificate valid for kindergarten work in the state of Kansas.

PRIMARY CERTIFICATE. Those persons completing the two-year primary course will be given a life certificate to teach primary work.

INTERMEDIATE GRADE TEACHER'S CERTIFICATE. Those persons completing the two-year grade teacher's course will be given a life certificate to teach in the grades.

RURAL TEACHER'S CERTIFICATE. Those persons completing the two-year rural teacher's course will be given a life certificate to teach in the rural schools of the state.

One hundred twenty-four semester hours of work are required for graduation from the degree course. Four hours of this work are in the Physical Education Department. A semester hour consists of one class period per week in a subject for one semester, except laboratory, drawing, manual and physical training subjects, in which two class periods per week for a semester constitute a semester hour.

No more than four hours college credit of the one hundred twenty-four will be allowed for practice courses in physical education.

COUNTY EXAMINATIONS.

Regularly enrolled students of the State Manual Training Normal School may, upon the payment of the usual examination fee of one dollar, present themselves for examination for county certificates, to be conducted under the supervision of the officers of the State Manual Training Normal School, at any time when such an examination is given at any point in the state. The papers in such examination will be sent to any county designated by the applicant, there to be examined by the county board of examiners, who will issue certificates to the successful applicants under the same conditions as if the examination had been conducted under their supervision.

ELECTIVES.

Choice of electives by students should be made upon the advice of the head of the department in which the student is majoring.

NUMBERING OF COURSES.

All courses numbered 1 to 50 are open to freshmen and sophomores. Those numbered 51 to 100 are open to juniors and seniors. Any variation from the above will be upon the recommendation of the heads of the respective departments.

In the History Department courses 62 and 65 are open to all classes.

AGREEMENT AS TO TRANSFER OF CREDITS.

Graduates in the degree courses offering at least 120 hours of college credit, except credit from the following courses, are admitted to the Graduate School of the University of Kansas as candidates for the degree of master of science in education on the following conditions:

At least 40 hours of the 120 hours must be selected from senior college subjects.

A maximum of 30 hours will be accepted in domestic art, domestic science, and industrial arts.

A maximum of 20 hours in public speaking and 6 hours in commerce will be accepted.

Credit not accepted as entrance to the Graduate School for the M. S. degree from the following courses: Bookkeeping, business arithmetic, penmanship, shorthand, business English, typewriting, dictation and office practice, commercial correspondence, business forms and spelling, domestic art 1*a*, domestic science 1*a*, history courses 61 and 65; music, except in School of Fine Arts, piano, voice, glee club and chorus work not accepted.

The above courses are all considered essential in the preparation of teachers for their work. They are not sufficiently advanced and of such character as to warrant their being presented as entrance credit to graduate schools.

Candidates desiring to enter the University of Kansas who have not completed the degree course of 120 hours will receive credit hour for hour for the work done in all courses in the catalogue, except as above specified.

Students desiring to enter the Graduate School of the University for the master of arts degree will be given entrance credit in so far as the courses or degrees presented show substantial equivalence to the University requirements for similar credit.

THE LIBRARY.

The library contains about 8,500 volumes, *carefully selected with reference to the needs of the different departments*, besides a large number of pamphlets. The librarian and assistant are always ready to be of service to students who wish to use the library. The reading room contains a large and well-chosen list of periodicals.

AMOUNT OF WORK.

Eight hours constitute regular work for an individual during the Summer Session. No one may be enrolled for exceeding nine hours, except by permission of the Committee on Advanced Standing. Application for such additional hours must be made in writing, and must not be made for more than ten hours. Students enrolling after the first week are not permitted to enroll for work exceeding eight hours, and for each week of delinquency in enrolling thereafter an hour will be subtracted from the eight hours constituting regular work.

RECREATION.

Many things in and near the city of Pittsburg make the State Manual Training Normal School a delightful place in which to spend these summer weeks:

The splendidly equipped buildings of the institution.

The famous McCray Municipal and College Band, with weekly concerts in Lincoln park and on the Normal campus.

The annual excursion to the Ozark mountains. Seventy miles of mountain scenery. A day of fishing, boating and bathing in crystal waters in the midst of a beautiful mountainous environment.

Twenty minutes' interurban ride to picturesque Spring river. Fine place for boating, bathing and picnicking.

Opportunity to see in operation, in the great coal fields of Kansas, the largest steam shovels in the world.

Opportunity to inspect the great coal mines, machine shops, power plants and factories, which are among the greatest in the Mississippi valley.

One hundred and twenty-five miles of interurban railway, reaching from Pittsburg into the greatest lead and zinc fields in the world.

Intramural tennis and baseball, with special directions and supervision in coaching these games. All playground games under the direction of Department of Physical Education.

Week-end excursions under the direction of various departments to places of special interest.

SMITH-HUGHES COURSES.

The institution has been approved for the preparation of trade and industrial teachers by the Federal Board, and courses are being arranged leading to that end. Full courses for the preparation of such teachers will be organized and in full operation the beginning of the fall semester. However, many teachers will want to begin their preparation at the earliest possible moment, and so to meet that demand many of the fundamental courses will be offered during the Summer Session. There is a large demand for such teachers, and it will pay you to investigate this matter thoroughly when you come for your summer enrollment.

For further particulars and specific information address President W. A. Brandenburg.

INSPECTION TOURS.

During the Summer Session many inspection tours are organized for the purpose of giving students interested an opportunity to see the real practical operations in connection with many of their studies. Such trips in the past have been organized and conducted under competent leaders in the departments of Physical Sciences, Biology, Mathematics and Industrial Arts. Many other trips will be planned for this summer if students desire them.

Biological Sciences.

O. P. Dellinger, Professor.
W. E. Ringle, Associate Professor.
Richard R. Sigler, Assistant Professor.
Ralph Wells, Instructor.
——— ———, Agriculture.
A. B. Steele, Assistant.
Lorene Bailey, Assistant.

There has developed within recent years a demand for better and more universal biological instruction. With the introduction of agriculture and domestic science into our schools, a knowledge of biology is demanded of a much larger number of individuals. For a long time biology was taught for its general cultural value or in its application to medicine; and to-day most of the courses in colleges and universities, and in some normal schools are organized to meet the needs of the general student or the student of medicine. Teachers of biology have failed to realize that the mass of biological instruction from now on must be largely designed for students in agriculture, domestic science, education, and medicine, and the courses must be so constructed as to meet the special needs of these students.

It is the plan and purpose of the Department of Biology to offer instruction in biology as it applies to these fields; and many of the courses organized are especially for the student of domestic science, agriculture, or education. There are, however, a few courses of a general nature, but they are fundamental to any education.

The laboratories are well equipped to give the courses offered in biology. The equipment consists of forty new compound microscopes, with fifteen oil immersions, dissecting microscopes, prepared microscopic slides for histologic embryology and bacteriology, some four hundred lantern slides for demonstrations, microtomes, ovens, glassware and stain for histological studies, and incubators, sterilizer and glassware for cultural work in bacteriological, aquaria and vivaria for the study of living specimens in the laboratory. Also in connection with the department there is a greenhouse where students can carry on experiments in plant growth, propagation and plant breeding. The school has recently purchased thirty-five acres of ground on which there are large ponds. Here the students can study a great many of the native plants and animals in their natural habitat.

BOTANY.

Course 1.—General Biology. In this course the student studies the laws of growth and reproduction of living organisms as they are illustrated in plants. Here emphasis is given to the economic phases of botany. Plants are studied in their relation to medicine, textiles, lumber, ornamentation and food production. Attention is given to propagation and distribution. Three hours credit.

Course 3.—Invertebrate Zoölogy. In this course a series of forms representative of all the phyla of the invertebrates is studied. The emphasis is placed on morphology, life history and behavior. Prerequisite, course 1 or its equivalent. Credit, four hours.

Course 11.—Human Physiology. The purpose of the course is to teach those things that will enable the student to make of his or her body, and also the bodies of those they minister to, the most efficient mechanism possible. The requirements of the body as to food, exercise, sleep, fresh air, bathing, etc. The physiological requirements of children, where they differ from the adult, will be emphasized. The physiology of reproduction will receive the attention it deserves. Four hours credit.

Course 12.—Neurology. A study of the gross anatomy, physiology and microscopic structure of the nervous system of the vertebræ. Two hours credit.

Course 13.—Nutritional Physiology. As the name implies, the course gives special attention to the physiology of nutrition. It covers about the same field as the first half of course 11, but goes much more into detail, and has more extended laboratory work. Four hours credit.

Course 14.—Nature Study. This course is designed especially for primary and grade teachers. It attempts to answer the question, What knowledge of living form is adapted to children between the ages of six and fifteen? A review of the literature in this field is also given. Two hours credit.

Course 15.—GENERAL BACTERIOLOGY. This course is required of all students who major in domestic science or agriculture, and is open to any student in the College course. It is a general introductory course, consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit.

Course 53.—GENETICS. The course is especially designed for domestic science students, but is open to all students of college grade. A careful review of the literature on heredity and eugenics is given, together with a study of the law of reproduction. Two hours credit.

Course 54.—HISTOLOGY AND EMBRYOLOGY. This is a laboratory course in which the student is given an opportunity to make preparations of the animal tissues and to study their microscopical structure. Two hours credit.

Course 62.—SYSTEMATIC ZOÖLOGY. A classification of the different groups of animals of the state. By appointment only. Four hours credit. Prerequisite, course 1 or 2, or equivalent.

Course 12.—PHYSIOLOGY AND HYGIENE. This is a course designed especially for grade- and rural-school teachers, covering the principles of physiology and hygiene. Special emphasis is laid on ventilation, foods, play, eye, and ear hygiene, and those phases of the subject which are of interest to every grade-school teacher. Three hours credit. Fall and summer terms.

NORMAL HIGH SCHOOL.

Courses 1 and 2.—GENERAL BIOLOGY. These courses are designed to serve as an introduction to the elementary forms and forces of living nature. Here the student becomes acquainted with the common animals and plants that enter into the practical activities of the home and farm. Much of the work in the fall and spring is done out of doors. Required of first-year students in all groups. One-fourth, one-half or one unit.

Course 5.—ELEMENTARY PHYSIOLOGY. This is a course in elementary physiology and hygiene designed especially for the elementary-school teacher. It deals mainly with the function of the organs of the human body and the hygienic conditions under which they do the best work. Attention is given to elementary-school hygiene. One-half unit credit.

AGRICULTURE.

———, Professor.

The work of this subject is conducted by means of textbook study, reference work, lectures, demonstrations, observations of field work, laboratory experiments, practical work in the school gardens and at the experiment stations. The experiment stations consist of about thirty-five acres devoted to various experiments and tests that have special value to the teachers and farmers in this section of the country. Through the affiliation of other departments, practical courses in farm blacksmithing, farm carpentry, gas engines and farm mechanics have been worked out to meet the needs of those specializing in agriculture. The following courses are offered:

Course 1.—RURAL-SCHOOL AGRICULTURE. This course is designed to meet the needs of those who are preparing to teach in the grades and rural schools. Practical experiments and demonstrations will be outlined for each grade. Two hours credit.

Course 2.—General Agriculture. A course in which a general survey of the whole field of agriculture is taken. This course is planned especially for the students who wish a general introduction to this great industry. While Biology 1, 2 or 12 is desirable as a prerequisite, it is not necessary. Three hours credit.

Course 4.—Agronomy. Lectures and recitations on the history, production, cultivation, harvesting and marketing of farm crops. The laboratory work and field work will consist of a study of all crops adapted to this region and judging of different cereals. Four hours credit.

Course 51.—Horticulture and Farm Forestry. This course gives the student a general survey of the field of fruit and truck growing, gardening and forestry. Much of the work will be done in the field. Two hours credit.

Course 2.—Vegetable Gardening. Principles and practices used in growing vegetables. Special attention is given to the home garden. The scoring, marketing and canning of vegetables is given special emphasis. The work has been arranged to meet the needs of those specializing in domestic science and agriculture. Second semester; two hours lecture, two hours laboratory and field. Two hours credit.

Course 17.—Hygiene and Public Health. A course in elementary bacteriology designed especially for grade and rural teachers. The course is a general survey of the field of bacteriology as it relates to civic and school sanitation, agriculture and the preservation of foods. The student becomes familiar with immunology and the physiological factors involved in the natural resistance to disease. Three hours credit. Fall and summer terms.

Course 69.—Economic Entomology. A course similar to course 19, but presupposing knowledge of morphology of insects. Students will be required to make collections of the common economic insects together with their life histories, also an experimental study of the affectiveness of various agencies of control will be made. This course is largely a laboratory and field course. Two hours credit.

Chemical and Physical Sciences.

J. A. Yates, Professor of Chemical and Physical Sciences.
G. V. Emery, Associate Professor.
W. R. Cleveland, Associate Professor.
Margaret Coventry, Assistant Professor.
W. H. Matthews, Instructor in Physics.

CHEMISTRY.

Course 1.—General Chemistry. This course consists of lectures, recitations and laboratory work upon the fundamental principles of this science, together with the application of chemistry to the various arts and industries. Among the practical subjects considered are chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils and varnishes, water, air, fuels, and the elementary principles of chemistry in food preparation and other operations in the home. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. This course is not open to students offering elementary chemistry for admission. Laboratory fee for material used. Five hours credit.

Course 3.—Qualitative Analysis. This course consists largely of laboratory work. Emphasis is placed upon the analysis and properties of those substances that are used in the industrial arts, as oils, pigments, paints, varnishes, fuels, and alloys. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

Course 15.—GENERAL SCIENCE. This course is planned for grade teachers, and consists of easy demonstrations, which may be performed by the teacher to illustrate some of the scientific principles involved in the study of such subjects as air, water, fire, food, clothing, etc., thereby giving the teacher preparation which will enable her to acquaint the child with its physical environment. Two hours credit.

Course 22.—HEATING AND VENTILATION. The principles of operation underlying the various modern systems of heating and ventilation installed in homes and school buildings form the basis of this course. It includes practical problems in the designing of heating and ventilating systems for buildings. Prerequisite, high-school physics. Two hours credit.

Course 23.—ELECTRIC WIRING. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Two or four hours credit.

Course 24.—ILLUMINATION. A practical course in the designing of illumination distribution for all purposes—home, school, business house, and street lighting. It includes a study of the various types of light sources, shades, and reflectors and their adaptability for various classes of service. Prerequisite, course 23. Two hours credit.

Course 25.—GAS ENGINE I. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics, industrial activities, or in automobiles. Laboratory and lectures. Prerequisite, high-school physics. Three hours credit.

Course 30.—GENERAL PHYSICS. Designed for those wishing a brief course in college physics. It includes a rapid survey of all the branches of physics, interspersed with demonstrations and laboratory exercises, which will be of special value to those going out to teach high-school physics. Five hours credit.

Course 33.—MAGNETISM AND ELECTRICITY. Theories and laws of magnetic and electric phenomena, with their application to modern appliances, operations, and machines. Prerequisite, high-school physics. Four hours credit.

For electives in this department see section II, pages 59-64.

Commerce.

E. F. SHOLTZ. Director.
WALTER LYERLA, Assistant.
L. C. GUFFEY, Assistant.

BEGINNING SHORTHAND. A complete study of theory of shorthand. The text is completed to lesson twelve. This class is especially for those intending to continue the work in September, when the work will be started at lesson twelve. One-fourth unit.

DICTATION AND OFFICE PRACTICE. Dictation begins at sixty words and speed is increased as fast as possible. One-half unit.

GREGG MANUAL REVIEW. Complete review of Shorthand Manual. One-fourth unit.

LETTER WRITING OR COMMERCIAL CORRESPONDENCE A drill in punctuation, capitalization, letter writing, letter forms and postal laws. One-half unit.

PENMANSHIP. Drills, forms of letters and methods. One-fourth unit.

BOOKKEEPING Application of laws of debit and credit. Business practice. One-fourth unit.

BUSINESS LAW. Study of laws governing contracts, principal and agents, master and servant, partnership, joint stock companies and corporations, etc. One-half unit.

COMMERCIAL METHODS. Methods of teaching commercial subjects. One hour credit.

Drawing and Design.

LYLE BROWER, Professor.
EVELYN METZGER, Assistant Professor.

The courses offered in the Summer School are those which have proved to be of the greatest value to students who are in active service in the teaching field and for those who wish to secure credit towards the completion of their college courses.

The courses are offered in such a form that they can be completed in the summer term, but should the student prove himself able to do more work, either through special qualifications or preparation, or by giving extra time, he will be allowed to complete any subject, thereby securing more credit, provided the student is not enrolled for the maximum amount of work for the summer session.

Course 1.—ELEMENTARY DRAWING. A study for those who have had no previous training in drawing. It gives a thorough training in the fundamental principles. One hour credit.

Course 3*a*.—ELEMENTARY ARTS. Drawing for the kindergarten and first three grades. One hour credit.

Course 3*b*.—ELEMENTARY ARTS HANDWORK. Handwork suitable for the kindergarten and primary grades, with a study of materials suitable for these grades. One hour credit.

Course 4.—WATER COLOR. Still life and landscape in transparent color rendering composition with the use of opaque color. This class will be offered opportunity for outdoor sketching. One or two hours credit.

Course 5.—PRINCIPLES OF DESIGN. A basic study of principles of design, both theoretical and applied. Special attention is given to the needs of students in the Home Economics Department. One hour credit.

Course 7.—CHARCOAL DRAWING. A study of charcoal as a medium in mass rendering, light and shade. One hour credit.

Course 8*a*.—ADVANCED ARTS. Drawing for the upper grades, with outlines for direct application in class work. One or two hours credit.

Course 8*b*.—INDUSTRIAL ART FOR UPPER GRADES. A course which combines design with decoration. Cardboard, cloth and wood will be used. Toys constructed and decorated will be a special feature. Two hours credit.

Course 9.—Theory of Color. Principles of color harmony, tending to develop an understanding of color with reference to its use in home life. One hour credit.

Course 12.—Elementary Architectural Drawing. Conventions of drafting of house plans, with a study of a small cottage. One or two hours credit.

Course 20.—Art Appreciation. A general survey of the field of art, with a study of the masterpieces of painting and sculpture. Two hours credit.

Course 22.—Home Economics Drawing. A study of the equipment, and plans for schoolrooms. One hour credit.

Course 24.—House Planning. A study of home planning, with its development and relation to home life. One hour credit.

Course 25.—Interior Decoration. A study of room interiors; colors and materials suitable for walls, carpets, etc. Design and arrangement of good furniture. One or two hours credit.

Course 26.—Costume Design. Principles of design applied to the problems of the sewing department. One or two hours credit.

Education.

D. M. Bowen, Professor.
Edgar Mendenhall, Professor Rural Education.
C. S. Risdon, Superintendent.
Frank Deerwester, Associate Professor.

Enlarged opportunities for work in education will be offered during the Summer Session of 1920. In addition to the regular Faculty, educators of national prominence and superintendents of wide experience will assist in the work outlined.

Junior College Courses: Course 1, Management; Course 2, Elementary Education; Course 3, History of Education; Course 6, Social Principles in Education; Course 3, Child Psychology; Course 1, General Psychology; Course 7, Stories and Literature; Course 1, Rural Education.

Senior College Courses: Course 51, Administration; Course 52, Educational Measurements; Course 55, Secondary Education; Course 57, Educational Psychology; Course 59, Philosophy of Education; Course 2, Rural Education.

ADMINISTRATION AND SUPERVISION.

Course 1.—Management. This course deals with the elementar problems of class organization, the course of study, daily program recitation, discipline and other topics affecting the conduct of the school Two hours credit.

Course 2.—Elementary Education. This course presupposes completion of a high school normal training course or its equivalent. Th course of study, its organization for teaching purposes, educationa values, and methods of presentation. Principles of classification, pro motion and gradation of pupils, delinquent children and other vita topics affecting the elementary school. Two hours credit.

Course 3.—History of Modern Education. A course in the histor of modern education, beginning with the Renaissance and tracing edu cational movements and tendencies down to the present. Three hou credit.

Course 52.—EDUCATIONAL MEASUREMENTS. This course will cover: (1) the reasons for the measurement movement; (2) its historical development; (3) the educational scales in arithmetic, reading, spelling, geography, writing, history, school buildings, teacher rating, algebra, language and composition. Since this movement is in the making, other scales, as they appear, that may not be listed here, will be made a part of the course.

The scales will be considered from three standpoints: (1) their derivation; (2) their validity; (3) their use. Students will be required to provide themselves with the scales, give the tests so far as is possible, and score the work of pupils. Effort will be made not only to acquaint students with the theory of educational measurements but with the practical application as well.

Students in this course will be brought in contact with the elementary principles of statistical methods applied to educational problems. Two hours credit. Open to juniors and seniors or mature students with experience.

Course 51.—ADMINISTRATION. A study of the larger problems of administration, the relation of the state to education, the various units of school organization, district, township, county, state and nation, the various administrative officers, their powers and duties, the teaching staff and present tendencies of educational administration in America. Two hours credit.

Course 6.—SOCIAL PRINCIPLES IN EDUCATION. A course in educational sociology dealing with the social laws and principles governing education. A socialization of the school, its administration, course of study, methods and discipline. A discussion of the school as an instrument for social efficiency. Two hours credit. Open to Sophomores.

RURAL EDUCATION I. This course is primarily for beginning teachers, and teachers of limited experience and training. The organization of the rural school, the making of the program, problems of school discipline, schoolroom decoration and equipment, the rural-school playground will receive due consideration. Two hours.

RURAL EDUCATION II. This course will be organized for teachers of experience, principals of village and rural high schools, and supervisors of rural schools. The larger problems of rural education, (1) the school and the community, (2) hygiene and rural community sanitation, (3) community recreation, (4) the rural church, (5) the rural home, (6) model curricula for rural common schools and rural high schools, (7) school consolidation, (8) the district and the county plan of school organization, will receive attention. A basal text will be used supplemented by reading of reports of state superintendent, school surveys and other appropriate material. Two hours.

PSYCHOLOGY.

Course 1.—GENERAL PSYCHOLOGY. Two hours. The purpose of this course is to give the students a working knowledge of the accepted facts and general principles of psychology. In order to give a fair representation of the science as a whole, the descriptive, structural and dynamic phases of psychology are discussed. The point of view is on the whole functional, more attention being paid to what the mind does than to what it is. Discussions, outlines, readings, reports and simple experiments.

Course 57.—EDUCATIONAL PSYCHOLOGY. Two hours. This course deals with the application of psychological principles to education. The laws of learning; the amount, rate and limit of improvement; the factors and conditions of improvement; mental discipline; mental fatigue; individual differences and their causes, and original tendencies of man. Discussions, outlines, readings and reports. Course in General Psychology prerequisite.

Course 3.—CHILD PSYCHOLOGY. Two hours. The aim of the course is to acquaint students with the most important established facts and principles of mental and physical growth of the child. To enable students to recognize types and individual differences among children; to notice, interpret and deal properly with certain defects; to cultivate an intelligent sympathy with children.

Course 55.—SECONDARY EDUCATION. The purpose of this course is to introduce the student to the vital problems of secondary education. The course is divided into two main parts. The first half deals with the administration of secondary schools, course of study, organization and management, social factors, school government and material equipment. The second half of the course deals with the psychology of high-school subjects; introducing the student to the most important psychological principles underlying the various subjects taught in secondary schools. Discussions, outlines, reading and reports. Two hours credit.

Course 59.—PHILOSOPHY OF EDUCATION. An interpretation of education as an integral phase of the life process; as a phase of human endeavor. A discussion of certain fundamental problems of education from the viewpoint of philosophy; a study of the aim, content and method of education as determined by the philosophy of education. Two hours credit. Open to juniors and seniors.

TRAINING SCHOOL.

CRITIC TEACHERS.

ELSA SCHOSHUSEN, Kindergarten.
ANNE DEN BLEYKER, Primary.
BESS M. HAYDEN, Intermediate.
————, Primary.
LAURA L. REMER, Junior High School.

The Training School will be in full operation during the Summer Session. Classes will be organized in all grades, from the kindergarten to the ninth grade, inclusive. The school is planned in the summer for purposes of observation rather than practice. The classes are taught by the regular critic teachers and are in session only in the forenoon. In the afternoon the critic teachers conduct a round table, discussing the problems arising during the school session. This phase of work is interesting and profitable to elementary teachers of all grades of school work.

English.

The courses in English for the Summer School of 1920 present something of a departure from those hitherto offered for summer work. Instead of the customary grind in English composition, it is designed to devote the same time and energy to the more pleasurable study of literature. To this end, six different courses are offered in literature. Any high-school graduate may enroll in any one of these. The study of each will be correlated with some written work, wherein the essential forms of English composition will be enforced.

ERMINE OWEN, PROFESSOR.

1. THE EPIC. (Col. 2.) A presentation of types of literature merging into an intensive study of *The Lesser Epic* and *The Grand Epic*. Three hours credit.

2. LITERARY CRITICISM. (Col. 4.) A presentation of forms of litera- ure, merging into an intensive study of lyric poetry, critically and ana- ytically considered.

3. MYTHOLOGY AND ENGLISH CLASSICS. (High school 7.) Guerber's 'Myths" correlated with a study of those English authors drawing most eavily upon classic mythology: Milton, Shelley, Keats.

PRESTON R. REED, ASSOCIATE PROFESSOR.

1. SHAKESPEARE. (Col. 3.) A study of the art and technique of the world's greatest dramatist as illustrated in "Hamlet," "Comedy of Errors," and Twelfth Night."

2. JOURNALISM. (Col. 58.) News gathering, reporting and correspondence, the value of news, the feature story, purpose and content of all styles of journalistic writing. Three hours credit.

3. VICTORIAN POETRY. (Col. 55.) Browning, Rosetti, Kipling, Swinburne, with some attention paid to current verse and the poetry of the Great War. Two hours credit.

4. THE ENGLISH ESSAY. (Col. 56.) Bacon, Ruskin, Lamb, Macaulay, Fitch. Some time will be given to the study of the great magazine articles on the late war and on conditions growing out of it. Two hours credit.

Foreign Languages.

SAMUEL J. PEASE, Professor.
ERNEST BENNETT, Assistant.

FRENCH.

COLLEGE COURSES.

In all courses the maximum of spoken French will be used.

Course 1. Fraser and Squair's Shorter French Course. Snow and Lebon's Easy French. Emphasis on verbs and pronouns. Phonetics after the Le Daum method. Extensive oral practice, phrase books, etc. Special arrangement for this summer; either the grammar (3 hours) or the reading and conversation (2 hours) may be taken separately. Total credit, five hours.

Course 2*s*. Grammar, continued. Reading of much simple prose bearing largely on present conditions. Conversation, with special emphasis on idioms. Two hours credit.

Advanced French. Modern readings, reports, oral practice, letters. Two hours credit.

French conversation. Open to all. Meets at assembly period, M. W. F., except when there are special lectures. Pronunciation and everyday phrases. No separate credit.

SPANISH.

COLLEGE COURSES.

Course 1*a*. Hills and Ford's Spanish Course and Bergé-Soler and Hatheway's Elementary Spanish-American Reader.

Course 3. Reading and reports on a large number of state texts; much oral practice. Three hours credit.

LATIN.

COLLEGE COURSES.

Course 1*b*. Smith's Latin Lessons. Derivation, relation of Latin to English. Corresponds to last half of first-year Latin in high school. Three hours credit.

Course 2*b*.—CÆSAR II, with composition. Three hours credit. Two hours additional by correspondence.

Course 61.—METHODS FOR TEACHERS. Observation reports, lectures, charts. Two hours credit.

Language 72.—THE LANGUAGE FUNCTION. Development of the language function in the individual. Capacities and adaptability of children and adults at varying ages. The factors of linguistic development. Relation to the other functions of the mind. Results of different types of curricula. Place of the ancient and modern languages in the development of the language function and of the modern school. Three hours. No prerequisite, but should be preceded by Child Study and Educational Measurements. Especially for superintendents, principals, and teachers majoring in Education, English or Foreign Languages.

FRENCH.

SENIOR HIGH SCHOOL.

FRENCH I. Ten periods per week. Fraser and Squair, Snow and Lebon. One-half unit credit.

LATIN.

SENIOR HIGH SCHOOL.

LATIN II. Second half of first-year Latin. One-half unit. Smith's Latin Lessons.

CÆSAR II, with composition. One-half unit.

Geography.

EULALIA E. ROSEBERRY, Professor.
ZOE A. THRALLS, Assistant Professor.
GLENN B. LITTON, Student Assistant.

The department has been unable to fill the demand for teachers of geography. The demand is not only for teachers in grades and high schools but also for teachers in teachers' training schools. No other subject offers greater opportunities than geography.

Course 1.—PHYSIOGRAPHY. Designed for college students who desire scientific knowledge of the earth, its relations, physical features, and their origin and development. The work is supplemented by laboratory and field work. Economic controls are given special attention. Courses required in grade teachers' course. Offered each semester. Never in the history of the world has a knowledge of these factors been so desirable as at the present time. Five hours credit.

Course 1*b*.—PHYSIOGRAPHY. The course is designed for college students who have had one year's work in high-school physical geography. The course embraces the scope of work in course 1, in review. Three hours credit.

Course 2.—INDUSTRIAL GEOGRAPHY. This course includes, first, a brief study of the geographic basic controls of climate, soil and topography. The course encompasses the origin, history and development of agriculture, textiles, food products, minerals and manufacture of machinery as controlled by geographical factors. This course is especially valuable for the grade teacher, and is particularly designed to correlate with the industrial courses. Three hours credit.

Course 3.—GEOGRAPHY OF AMERICAN HISTORY. This course is designed especially to correlate with American history courses, and consists of a study of geographic conditions which have influenced the course of American history and of their importance as compared with one another, and with nongeographic factors. Special attention will be given geographic factors influencing the recent war. Three hours credit.

Course 4.—PRIMARY GRADE WORK. The teacher in the primary grades must, in order to give the most efficient service, have a knowledge of geographic control far beyond that which is necessary to give the pupil. This course is designed especially to give necessary knowledge to the teachers of nature study and of primary grades, and for those doing departmental work in geography. The work consists largely of the selection and adaptation of material best suited to first four grades and to the method of presentation. Two hours credit.

Course 5.—GRAMMAR GRADE WORK. This course encompasses, first, a study of basic geographic controls, and second, subject matter and methods for the grades above the fourth, and is designed for grade and rural teachers and those doing departmental work in geography. The problem method in geography is given special attention. Two hours credit.

Course 6.—COMMERCIAL GEOGRAPHY. This course is organized to give the student a scientific knowledge of the three distinctive sets of controls—the natural, the human, and the economic. It correlates not only with the other commercial courses, but with the industrial subjects as well. Three hours credit.

Course 51.—SOUTH AMERICA. This course encompasses the following topics—surface features, climate, resources of the continent in general, also the historical background of the republics; the factors upon which rest the commercial and industrial development of the various nations; the basis and character, present and future, of trade between the United States and South America; what opportunities there are in South America for Americans. Three hours credit.

Course 52.—GEOGRAPHY OF EUROPE. Every teacher should have a knowledge of the elements underlying the relationship existing between ourselves and the nations of Europe. Our increased interest in the European nations demands that not only the teacher must have this knowledge but should be able to teach it to the future voters, and statesmen of our nation. This course has been organized for the purpose of putting the teachers in touch with subject matter in such manner that they may become as familiar with the situations in the countries of Europe as with those of the United States. Our new responsibilities demand that our teachers must give more attention to this problem than they have in the past. Three hours credit.

HIGH SCHOOL.

Course 4.—COMMERCIAL GEOGRAPHY. This course is designed to give the high-school student a knowledge of the geographic basis of commerce. It consists of text work, library reading, and the working out of geographic commercial problems. One-half unit credit.

History and Social Sciences.

G. W. Trout, Professor.
O. F. Grubbs, Associate.
John H. Bowers, Ph. D., LL. B., Associate.
Anne Caseley, A. B., Assistant.

The department is anxious to serve the needs of the teachers of Kansas and is doing all in its power to that end. Since our Summer School is to run six days a week, it will be necessary to offer principally two-hour courses. In some instances where that is not practical, we will offer the four-hour courses.

The following courses will be offered:

COLLEGE.

Course 58.—Sociology. An introductory study of the nature, function and development or progress of society. The aim is to familiarize the student with society and some of its problems and cultivate a desire to aid in the solution of these problems. Two hours credit.

Course 59.—Applied Sociology. In this course we endeavor to apply the principles of sociology to present-day problems. Course 58 is a prerequisite. Two hours credit.

Course 57.—Teaching History. This course is offered to all college students who expect to teach history. It is a careful survey of why we study history, how to study history, and how to teach others to study history. Two hours credit.

Course 61.—Parliamentary Law and Practical Legislation. This course is intended to prepare the student to organize and preside over deliberative bodies with order and decorum. Also to inform him of the actual methods employed in law-making. Two hours credit.

Course 67.—Latin America. A brief study of the history and traditions of our neighbors to the south—Mexico, Central and South America, with emphasis upon their social, racial and economic development, and their relation to Europe and to the United States. Two hours credit.

Course 52.—Economics. A brief examination of the principles and problems of production, consumption and distribution. Two hours credit.

Course 70.—Europe from 1870 to Date. This course is to take up the political problems of Europe since the formation of the German empire and study these in reference to the present Great War. Two hours credit.

Course 63.—American History II. This course covers the period from 1750 to 1829. It is a study of those forces and events which helped to create a national ideal and a national spirit. It deals with those contributions and political problems from within and from without which tended to weld our people into one sovereign state. Two hours credit.

Course 64.—American History III. This course is a study of the difficulties and dangers threatening the life of a nation, together with the forces that contributed to our marvelous progress. It covers the period from 1829 to date. Two hours credit.

Course 51.—Industrial History. A careful study of our natural resources, growth of population, expansion of territory; the invention of labor-saving machinery and legislation upon the industrial growth and development of our country. Two hours credit.

Course 53.—POLITICAL SCIENCE—COMPARATIVE GOVERNMENT. In this course we study the theories and functions of the modern state as exemplified in the leading nations of the world. Also careful observation of likenesses and differences of these states. Offered three hours per week during second semester of junior or senior year, college course. Three hours credit.

HIGH SCHOOL.

Course 2.—ANCIENT HISTORY. This course is given to the study of Rome through her rise and fall, and also the transitional period from 476 A.D. to the death of Charlemagne, 814. One-half unit credit.

Course 4.—MODERN HISTORY. This course takes up the Renaissance, Reformation, revolutions, social life of the times, rise and growth of constitutional governments, with the fall of absolutism. One-half unit credit.

Course 6.—CIVICS. This course is to give the student a thorough understanding of the principles and practical workings of our government and prepare for intelligent citizenship. One-half unit credit.

Course 8.—ENGLISH HISTORY. A short course based upon Cheyney's text, to aid pupils in understanding the basis of many of our modern institutions which are otherwise not clear in the student's thinking. One-half unit credit.

Course 7.—ELEMENTARY ECONOMICS. In this course attention is given to the fundamental principles of economics, with special work assigned to students suited to that course, such as rural economics, and social problems of city and farm. In our age of political, social and economic problems, this course is indispensable and lays well the foundation for further study in economics and society. One-half unit credit.

Course 5.—AMERICAN HISTORY. This course starts with the Civil War period and covers the period to date. Special emphasis given to the cause of the Civil War, reconstruction, industrial, social and political progress during the period. One-half unit credit.

Home Economics.

ZOE WOLCOTT, Professor of Home Economics, and Joint Director.
AGNES SAUNDERS, Professor of Home Economics, and Joint Director.
HENRIETTE PRIBNOW, Assistant Professor.
VIRGINIA SHEARER, Assistant Professor.
ANNIE MARRIOTT, Assistant Professor.
EDITH CASSEDAY, Assistant Professor.
EVELYN METZGER, Assistant Professor.

FOODS AND NUTRITION.

Course 1.—ELEMENTS OF COOKERY. This course is planned for students who have not had a course in food preparation in high school. It develops skill in the technique of cookery, and takes up a thorough study of foods; kinds, growth, preparation for market, composition, digestibility and fuel value. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 2.—FOODS AND COOKERY. This is a continuation of course 1. The two courses cover a study of beverages, cereals, vegetables, batters and dough, meats and poultry, fish, eggs, milk, and cheese. Following this scientific study of foods, preliminary work in serving and making menus is taken up. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 1*a*.—TECHNOLOGY OF COOKERY. Courses 1*a* and 2*a* are planned for those students who have had the equivalent of a good two-year high-school course in foods and cookery. It deals with the more difficult problems of the technique of cookery and with the principles underlying the cookery of all types of foods. Much time is spent on efforts to give the students the viewpoint of a teacher of cookery. The student's work during these courses will give a content sufficient for a teacher's background in foods and cookery and the best methods of presenting the work in elementary and secondary schools. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 3.—PRESERVATION OF FOODS. This course includes the study of food preservation. Canning and preserving of fruits, jellies, conserves, marmalades and pickling, canning of vegetables. One hour credit. A fee is charged to cover materials used in laboratory.

Course 5*a*.—HOME COOKERY AND TABLE SERVICE. The purpose of this course is to give opportunity for practice in home cookery, fancy cookery, and the serving of both formal and informal meals. Two hours credit. A fee is charged to cover materials used in laboratory.

Course 5*b*.—ELEMENTARY NUTRITION. This course describes very simply the essentials of an adequate diet and the nutritive properties of common food materials. The application of such knowledge to the feeding of individuals and family groups is discussed with special reference to limitations of cost. Three hours credit.

Course 8.—COOKERY FOR RURAL SCHOOL TEACHERS. This course is planned for rural-school teachers and has for its aim the study of possibilities of instruction in cookery in these schools. Training is given in the principles of cookery and courses of study are made. A study is made of equipment for teaching cookery in rural schools, serving of noonday lunches, home economics community clubs, and other problems which might arise. Three hours credit.

Course 51.—EXPERIMENTAL COOKERY. This is a quantitative study of cooking processes, comparative study of recipes, and the cost of materials involved. Relative values of various food products common in the present-day markets. Work in demonstrations will be given along with this course. Two hours credit. A fee is charged to cover materials used in laboratory.

Course 53.—DIETETICS, AND NUTRITION. This course presents the application of the fundamental principles of human nutrition under varying physiological and economic conditions; in the laboratory quantitative studies of food values are made. The course deals with food requirements of the individual in infancy, adult life, and old age. Typical dietaries are planned for the individual and family requirements. Four hours credit. A fee is charged to cover materials used in laboratory.

Course 54.—ELEMENTARY RESEARCH. Special problems in housewifery and housekeeping; surveys of city family conditions and rural family conditions will be made, and the general purpose of the household and family as related to the state, to education, and to industry will be investigated. The thesis work of the graduate students will be done in this course. Two hours credit.

Course 55.—DEMONSTRATION. This course offers a study of cookery demonstration, and equips the student to give instructive demonstrations. The aim of this course is to fit the teacher to do community work, as well as classroom work. Two hours credit. Fee charged to cover materials used in laboratory.

Course A.—COOKERY. This course is purely practical and includes the preparation of vegetables, fruits, cereals, meat, eggs, bread, cakes and pastry; also work in canning and preserving. Attention is given to food combinations, place in the menu, and costs. One hour credit. A fee is charged to cover materials used in laboratory.

TEXTILES AND CLOTHING.

Course 1.—SEWING AND GARMENT MAKING. This is a general preparatory course for students who have had no domestic art in the high school. It covers all the fundamental elements of sewing and gives practice in applying them upon simple garments and dresses. A fee is charged to cover material used in laboratory. Three hours credit.

Course 2.—SEWING AND GARMENT MAKING. This course deals with the simple problems of cutting, fitting, and alteration of commercial patterns. Special attention is given the making and use of demonstration material. A wash dress, a tailored middy, and a tailored linen dress are made. Prerequisite, course 1. A fee is charged to cover materials used in laboratory. Three hours credit.

Course 1*a*. TECHNOLOGY OF SEWING. This course is planned for those who have had one or more years of sewing in the high school. It deals with the more difficult problems of the technique of sewing. Considerable time is spent in efforts to give the students the viewpoint of the teacher of sewing, also the best methods of presenting the work in elementary and secondary schools. Three hours credit.

Course 3*a*. TEXTILES. This course deals with the elementary problems of textiles and is planned for life-certificate students. Two hours credit.

Course 4.—DRAFTING. Straight-line drafting is taught in this course. Pattern making, simple designing, the altering and adjusting of patterns to various fabrics of form are studied. A fee is charged to cover materials used in laboratory. Two hours credit.

Course 6.—DRESSMAKING. Commercial patterns, the proportions of the human form, the application of the principles of design and color to the gown, and the finishing of waists and gowns are studied in this course. The projects are a waist, a woolen or worsted dress, and a graduation gown. Prerequisite, course 4. A fee is charged to cover material used in laboratory. Four hours credit.

Course 7.—EMBROIDERY AND NEEDLEWORK. This course provides instruction in various kinds of embroidery. Crocheting, tatting and other phases of needlework are developed. A fee is charged to cover materials used in laboratory. Two hours credit.

Course 8.—SEWING FOR RURAL SCHOOL TEACHERS. This course has for its aim the training of teachers in work in domestic art which might be given in rural schools. The work consists of hand sewing chiefly, also the teaching of good taste in color combinations and decoration. Outlines and courses of study are made. A fee is charged to cover materials used in laboratory. Three hours credit.

Course 51.—DESIGNING AND DRAPING. This course gives instruction in advanced drafting and designing. Waists, skirts, sleeves and gowns are designed from foundation drafts, and more elaborate designs are draped on the form, cheesecloth and other inexpensive materials being used. No garments are made, but an invaluable knowledge of line and proportion is gained. Prerequisite, course 4. A fee is charged to cover materials used in laboratory. Four hours credit.

Course 52.—ADVANCED DRESSMAKING. This course provides opportunity for further developing the sense of line and proportion gained in courses 4 and 51. It deals with the characteristic use of silks and velvets. The projects are an afternoon gown and an evening gown. Prerequisite, course 51. A fee is charged to cover materials used in laboratory. Four hours credit.

Course 53.—ADVANCED NEEDLEWORK. This course includes the planning and making of a layette. The school furnishes the material for garments unless the student wishes to keep the articles made. Prerequisite, course 1. A fee is charged to cover the material used in laboratory. Two hours credit.

Course 54.—MILLINERY. This course deals with the selection of materials, the making and covering of frames, the fitting and trimming of hats, the making of flowers, and the renovating of millinery materials. Emphasis is placed upon the proper selection of hats, and their suitability to the wearer and the occasions for which they are intended. A fee is charged to cover material used in laboratory. Four hours credit.

Course 55.—TEXTILES. This course presents the foundation principles of the textile industry, special emphasis being placed upon early methods as an interpretation of the present methods of manufacture. The student is prepared to present this work in a graphic way and to become an intelligent judge of the quality and suitability of the various fabrics used for personal and household purposes. A fee is charged to cover the materials used in laboratory. Four hours credit.

HOUSEHOLD AND INSTITUTION MANAGEMENT.

Course 9.—HOUSEWIFERY. This course treats of kinds of service needed in various parts of the household, and the systematic planning of the daily routine; labor-saving appliances; repairing and renovation; household efficiency with reference to housekeeping methods. Two hours credit.

Course 52.—HOUSEHOLD MANAGEMENT. General management of the home is studied in this course. Care of the house; values in furnishings; investigations and discussions which will secure an intelligent judgment of expenditures involved in housekeeping: rent, fuel, light, water, furniture, and the cost of living; sanitation and the prevention and removal of unsanitary conditions. Laundry work is studied in this course. Two hours credit.

Course 58.—INSTITUTION COOKERY. This course is made up of lectures, conferences, observations and practice. The practice work consists of the preparation of food in large quantities, catering for entertainments, school lunches and banquets. A study is made of room plans, equipment, arrangement of menus, problems in connection with the serving of food, employees, food economics, and waste control, and the purchase of food in large quantities. Visits are made to local institutions, such as hotels and hospitals. This course is given in the college cafeteria. Three hours credit.

Course 59.—LUNCH-ROOM MANAGEMENT. This is a course for students who wish to prepare for lunch-room management. A study is made of the principles of scientific management and their application to lunch rooms; charting, time and motion studies, standardization of equipment and processes, making of schedules for employees, score cards, record keeping, etc. A trip to Kansas City for the purpose of visiting and inspecting various types of lunch rooms, wholesale houses, etc., is advised. Two hours credit.

Course 60.—HOUSEHOLD ADMINISTRATION. From six to ten weeks experience as manager and helper in a household of senior students. Four hours credit.

HOME ECONOMICS EDUCATION.

Courses 4 and 5.—METHODS. This is a special methods course dealing with administrative problems connected with home economics subjects in the public schools. The course includes the making of courses of study throughout the grades and high school, cost and planning of equipment, the correlation of these subjects with other subjects, educative value courses and disciplinary problems. Three hours credit.

Course 61.—METHODS IN SECONDARY VOCATIONAL HOME ECONOMICS. This course considers the relation of home economics to education; the methods of teaching; relation to high-school curriculum; the planning of lessons and courses of study suitable to the methods and purpose of vocational home economics; studies and experiments with materials and subjects leading to operations involving household occupations in preparation for organization of project work. Three hours credit.

Course 63.—SEMINAR IN HOME ECONOMICS EDUCATION. This course includes the study of problems in administration, organization, materials and equipment. Three hours credit.

Course 64.—ORGANIZATION OF TEACHER TRAINING IN HOME ECONOMICS. A consideration of the problems in organization of home economics for all-day, part-time and evening classes; curricula courses of study and preparation of teachers for the various types of schools will be treated. Two hours credit.

Course 65.—ADMINISTRATION AND SUPERVISION OF VOCATIONAL HOME ECONOMICS. This course is planned especially to meet the needs of supervisors of home economics. The topics treated are legislation, types of schools, supervisory plans and courses of study. Two hours credit.

Industrial and Applied Arts.

A. H. WHITESITT, Professor.
F. H. DICKINSON, Assistant Professor.
C. R. WASSER, Assistant Professor.
O. B. BADGER, Assistant Professor.
J. G. WILKINS, Assistant Professor.
VIVIAN ATWOOD, Assistant Professor.
ERNEST HAGLER, Assistant Professor.
H. T. JAMES, Assistant Professor.

SPECIAL PROFESSIONAL COURSES.

Course 3.—ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL ARTS. Principles underlying the organization of shop courses. Organization of industrial and vocational schools. Relation of industrial arts to other school courses; administration and supervision of industrial arts; shop layouts, planning equipment, specifications and cost of equipment. Two hours credit.

Course 51.—HISTORY OF INDUSTRIAL AND VOCATIONAL EDUCATION. A study of the growth of the manual arts movement in Europe and America. Promotion of industrial education in the United States; legislation; work of trade, vocational and technical schools. Two hours credit.

WOOD WORK.

Course 1.—BENCH WORK. Demonstrations and lectures and discussions on methods of teaching. A course which aims primarily to give training in the technical processes as a basis for teaching in the Junior

High School. An effort is made to balance theory and practice. Three hours credit.

Course 5.—ELEMENTARY WOOD TURNING. A study of the lathe, tools used, and processes involved in turning between centers; face plate work; polishing and finishing. Two hours credit.

Course 7.—ADVANCED TURNING. Chiefly face plate and chuck work; problems involving accurate fitting of parts, such as boxes and mirror frames; built-up and inlay work. Finishing, staining, dyeing and polishing. Two hours credit.

Course 9.—FURNITURE AND CABINET MAKING. Construction of period furniture with modern adaptation, including sawing, upholstering, inlaying and veneering. A course restricted to those with a high degree of manipulative skill and a keen appreciation of good design. Three hours credit.

Course 15.—ELEMENTARY WOOD FINISHING. The finishing of a series of small panels of different kinds of wood; a study of different kinds of stains each in relation to the character of the wood, its formula and its application; the relative values of oil, shellac, wax and varnish under varying conditions. Some work in the finishing of small projects. Two hours credit.

Course 59.—ADVANCED WOOD FINISHING. A course designed to meet the demand for a more exhaustive knowledge of the subject than course 13 affords. It deals chiefly with French polishing, varnishing and rubbing. It includes correct preparation of surfaces for securing best results; making and correct use of polishing pad, formulas for polish and their application. Two hours credit.

Course 19.—CARPENTRY. A study of the theory of roof framing with practical applications. Building of simple structures as garage or small house; placing and leveling sills and joists, erecting and plumbing walls, cutting and placing rafters. Outside finish, shingling, setting frames, siding, etc. Three hours credit.

Course 21.—MILL WORK. This course emphasizes the practical work of power machinery as, universal saws, band saws, jointers, planers, mortisers, shaper, tenoner, belt sander, etc. Shop organized as a producing factory in which economy of production is the dominant feature. Open only to those of proven ability. Three hours credit.

Course 23.—TECHNOLOGY OF WOODWORKING. A study of the structure and properties of wood; characteristics and distribution of the common species; growth and care of woods in the forest; source of supply; lumbering and saw-milling. Wood-working tools; fastenings—nails, screws, bolts; cabinet hardware; glue—kinds, strength and manufacture. One hour credit.

Course 25.—SAW FILING. Filing, setting, swedging and gumming of different kinds of saws; makes as to characteristics and quality; files—kinds and use; knife tool sharpening and adjusting. One hour credit.

Course 57.—PATTERN MAKING. Relation between pattern and casting. Shrinkage of different metals; meaning of draft, finish, cores. Pattern construction and the relation of pattern making to moulding and founding. Two hours credit.

PRINTING.

Course 1.—PRINTING. Elements of printing, such as the study of type, printers' measure, type cases, proof reading and the press. Practical work in general type-setting and operating the press. Two hours credit.

Course 2. This is a continuation of course 1, in which design is emphasized. Practical work is offered in color printing, selection of paper stock, composition of letterheads, envelope forms, business cards, programs, and books, and the making of wood cuts. Throughout the course there will be discussions on what to print in our public schools and how to proceed. Prerequisite, course 1. Two hours credit.

METAL WORK.

AUTOMOBILE MECHANICS. A study of the automobile, including frames, springs, axles and wheels, transmissions, clutches, motors and valve grinding; locating and repairing trouble; ignition, lighting and starting; wiring diagrams and their installation in general standard systems on cars; storage battery problems, etc. Two hours credit.

ELEMENTARY FORGING. Care of the fire, selection of coal and making of coke; proper use of tools; heats for different materials; exercises in drawing out and upsetting; welding, bending, forming, fullering and swedging. Two hours credit.

Course 10.—ELEMENTARY MACHINE SHOP PRACTICE. Chipping, filing, laying out, centering, drilling, scraping, tapping and threading with hand dies. Practice in the use of lathes, planer, shaper and drill press. Two hours credit.

Course 12.—GENERAL MACHINE SHOP PRACTICE. This course is a continuation of course 4, designed for the student's use in machine construction, millwrighting and general repair work. Machine construction is the making of small machinery, instruments and tools, the cutting of multiple threads on the lathe; also square, worm and acme threads; the use of the universal milling and grinding machines, such as using the dividing head, plain and different indexing, vertical milling and slotting; making spur, spiral, bevel and worm gears, and plain and cylindrical grinding on the grinder. Prerequisite, course 10. Two hours credit.

Course 50.—TOOL AND DIE MAKING. Tool and die making is more advanced work in shop practice. In this course mathematics plays an important part. The practical part consists of the making, annealing, hardening and tempering of all milling machine tools or cutters and of the hand tools, such as mandrels, taps, dies, reamers, drills and all necessary small tools. Internal grinding is also given, and the making of jigs. Die making consists of the making, annealing, tempering, etc., of dies and punches for practical use on our punch press. Prerequisite, courses 10 and 12. Two hours credit.

Course 14.—SHEET METAL. An elementary course involving simple problems which give practice in the processes of cutting, wiring, grooving, riveting, seaming, forming, edging, filing and soldering. The tool and machine processes used in the construction of these problems is the basis of the mechanical part of the sheet-metal trade. Two hours credit.

ARTS AND CRAFTS.

Course 1.—LEATHER TOOLING. Processes of tooling, modeling and coloring. Designs executed on useful articles, as purses, notebook covers, card cases, mats, table runners, etc. One hour credit.

Course 2.—ART METAL. Opportunity for individual expression in copper and brass in the making of such projects as trays, bag tags, desk sets, napkin clips, bar pins, hat pins, etc. One hour credit.

Course 3.—JEWELRY. Saw piercing, etching, soldering and stone setting. Suggested projects: chains, watch fobs, hat pins, rings, brooches, etc. Art Metal is a prerequisite for this course. One hour credit.

Course 4.—Elementary Basketry. Making of simple pieces in reed and raffia in which design is an important feature. One hour credit.

Course 5.—Advanced Basketry. Advanced problems in reed and raffia and pine needle and Japanese matting. Suggested projects: lamps, floor vases, trays, chairs, foot-stools, etc. One hour credit.

Course 6.—Book Binding. Simple problems in portfolio, notebooks, blank books, the binding of magazines and the mending and rebinding of books. One hour credit.

Course 7.—Elementary Clay Work. Clay modeling, making of tiles, spills, vases and bowls with one and two curves. One hour credit.

Course 8.—Advanced Pottery. Casting, making of molds and glazing. Suggested projects: electric toasters, pitchers, jardiniers, etc. One hour credit.

Course 9.—Wood Carving. Work in soft and hard woods. Original designs in relief and incised work on projects such as hand mirrors, book ends, trays, boxes, etc. One hour credit.

INDUSTRIAL ARTS DRAWING.

Course 1.—Sketching and Design. A course designed to develop appreciation of good design and ability to express freely, quickly and truly, by means of pencil and blackboard perspective. One hour credit.

Course 2.—Elementary Mechanical Drawing. A thorough grounding in the fundamental principles underlying good working drawings and ability to execute neatly and accurately. One hour credit.

Course 3.—Projection Drawing. Analytical study of orthographic projection of lines, points and solids. Fundamentals of projection are emphasized in problems dealing with revolutions, sections, intersections and surface developments. Pattern development suitable for use in sheet-metal work.

A study of pictorial projects such as isometric, oblique or cavalier and cabinet projection. Prerequisite, course 1. Two hours credit.

Course 4.—Furniture Design. Dominating purpose is to stimulate in the student a conception of furniture as an expression of beauty. A series of problems from the design of simple chairs and tables to more complex types of furniture. Emphasis upon period types with modern adaptations. One hour credit.

Course 5.—Elementary Machine Drawing. A course to familiarize the student with commercial drafting-room practice. Freehand sketches from castings and machine parts; detailed and assembled drawings. One hour credit.

Course 6.—Advanced Machine Drawing. A course which deals largely with the theory applied in practical work in the transmission of power by means of belt and rope drives, cams, crank motiôns, and gears. One hour credit.

Mathematics and Applied Mechanics.

J. A. G. Shirk, Professor.
C. O. Van Dyke, Associate Professor.
C. W. Wright, Assistant Professor.

College courses in both pure and applied mathematics will be offered during the summer term. Teachers of mathematics may continue their mathematical preparation along either or both of the lines indicated.

There is a demand for the introduction of more practical topics into the high-school subjects, and the courses in applied mathematics contain much that may be used in the regular high-school work. Mathematics teachers should know enough of the field of mathematics to give them a feeling of pride in their chosen subject. This necessitates constant study in the more advanced mathematical subjects, and also in the practical application of mathematics. The aim of mathematical instruction is brought out in every class, so that each is correlated properly with all that has preceded it.

COLLEGE COURSES.

Course 1.—PLANE GEOMETRY. The general properties of plane rectilinear figures; the circle and the measurements of angles; regular polygons; solution of numerous original exercises and practical problems. Open only to students not offering geometry for entrance. Three hours credit.

Course 2.—SOLID GEOMETRY. Elements of solid geometry; properties and measurements of surfaces and solids. Open to all students not offering solid geometry for entrance. Two hours credit.

Course 3.—ADVANCED ALGEBRA. This course corresponds to the work of Algebra III of a high school, and is open only to those students who have not taken Algebra III in their high-school course. It includes a review of linear and quadratic equations, radicals, involution, evolution, progressions, logarithms, and imaginaries. Two hours credit.

Course 4.—COLLEGE ALGEBRA. Rapid review of elementary algebra; graphic representation; complex numbers; series, logarithms; theory of equations; Horner's method. Three hours credit. Prerequisite, one and one-half units of high-school algebra, and one unit of geometry.

Course 5.—PLANE TRIGONOMETRY. The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two hours credit. Prerequisites, same as College Algebra.

Course 6.—ANALYTICAL GEOMETRY. The straight line; circle; elements of parabola, ellipse and hyperbola; polar coördinates; higher plane curves; elements of solid analytical geometry. Five hours credit. Prerequisite, courses 4 and 5.

Course 7.—CALCULUS. Differential calculus; fundamental principles; derivatives; rates; applications to mechanics; maxima and mimima; indeterminates; integral calculus; integration; definite integrals; applications to lengths, areas and volumes; moment of inertia; fluid pressure. The student is taught the use of tables of integrals in performing integrations. Five hours credit. Prerequisite, course 6.

Course 8.—INDUSTRIAL MATHEMATICS. This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks; mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; house building; power transmission; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit.

Prerequisite, two units of high-school mathematics, one unit of physics, or an equivalent experience in mechanic arts.

Course 9.—VOCATIONAL MATHEMATICS. This course is designed especially for women, and contains samples of problems from all occupations that women are likely to enter, from the textile mill to the home. Food computations; house construction; house furnishing; dressmaking and millinery; arithmetic for office assistants, sales girls, cashiers and nurses; and a thorough drill in the metric and English systems of weights and measures. Three hours credit.

Course 10.—TEACHING OF ELEMENTARY MATHEMATICS. Essential features of courses in arithmetic as far as the eighth grade. Principles and methods of teaching arithmetic and the allied mathematics of the elementary schools. The course will be presented with outlines with reference to historical material and the proper balance of abstract and concrete work. The aim is to study those topics likely to be introduced into the curricula of the first eight grades and to show how to relate arithmetic to the child's everyday life and his future needs. Two hours credit.

Course 11.—MATHEMATICAL THEORY OF INVESTMENT. A course for the students of business and public affairs. Interest, annuities, amortization, sinking funds, and depreciation, building and loan, and life insurance. Two hours credit. Prerequisite, College Algebra or Advanced Algebra.

Course 13.—DESCRIPTIVE ASTRONOMY. A general course in descriptive astronomy, dealing with the solar system and theories regarding its evolution; nebulæ, comets, meteors; measurements of the earth; determination of standard time. Two hours credit. Prerequisite, high-school algebra, geometry and physics.

Course 14.—FUNDAMENTAL CONCEPTS OF MATHEMATICS. A study of definitions and properties of the different kinds of numbers; irrationals and limits; transcendental numbers; complex numbers; fundamental concepts of geometry with a brief discussion of non-euclidian geometries; logic of mathematics. Two hours credit. Prerequisite, college algebra.

Course 19.—STRENGTH OF MATERIALS. A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shafting and reënforced concrete, resilience of materials. Two hours credit. Prerequisite, course 5 or 8.

HIGH-SCHOOL COURSES.

Course 1.—ALGEBRA I. One-half unit credit.

Course 2.—ALGEBRA II. One-half unit credit.

Course 3.—GEOMETRY I. One-half unit credit.

Course 4.—GEOMETRY II. One-half unit credit.

Course 5.—ARITHMETIC. One-half unit credit.

Course 6.—ALGEBRA III. One-half unit credit.

Course 7.—SOLID GEOMETRY. One-half unit credit.

Methodology.

Hattie Moore-Mitchell, A. M., Professor.
Jane Carroll, B. S., Assistant.
Olive Wholford, Assistant.
Lora Ward, Assistant.

Foreword. The methods work during Summer Session differs from that of the regular semester on account of increased number admitted to the class and the varied experience of those enrolled. Miss Carroll will assist again this summer.

The use of engravings in lieu of extensive notes proved so acceptable last summer that we will employ this means of instruction in connection with poster and chart work and as a means of illustrating phases of recreation work.

We hope it will be possible to have the workroom open at least four hours each day under supervision of an assistant, enabling students in copying or taking notes or completing specimens of handwork models for their own use. Students not enrolled in the department may obtain permission (by card) from head of department to visit workroom and take notes from models and exhibits.

Rural teachers will find the grade method courses valuable. Those planning to eventually take primary work are advised to enroll in primary methods.

Class Schedule and Budget. Upon admission to class each student is provided with an individual budget of expense and schedule showing what is included in the work upon which his credit is based. Often, if one knows the program in advance, several hours' continuous effort can be given to one line of work during Saturday or a holiday, which work otherwise would need be completed by piecemeal.

Substitute Recitations. Students in General Methods (Course 1) and Normal Training Methods (Course 51) have the privilege of attending, during the Summer Session, two recitations in other classes giving professional credit. All other courses in the department have privilege of one substitute recitation. A written report of such visit is made by the student, in lieu of note from methods recitation from which he is excused. This excuse is granted before each absence, and no substitute recitation credit is granted without such excuse. Permission must also be granted by professor whose class is visited.

Course 1.—General Methods (See General Course, Sophomore Year, page 53, General Catalogue). Text, Thorndike's Principles of Teaching. One semester's work in psychology is recommended as a prerequisite, although mature students with experience in, or high-school graduates from, normal-training course may carry the work.

This course presents teaching as a scientific profession as well as a practical service in imparting information. Students enrolled in this course are entitled to all privileges of workroom during work hours. Previews in typewritten form enable the student in his study of the text to note points needing library reference or report from professional observation. Students in this course are allowed one substitute recitation. Class recites four days in the week. Two hours credit.

Course 2.—Grade Methods.—Students who have not previously taken course in Grade Methods are advised to pursue work in this course. In case of conflict in recitation hours, students may enroll in Course 3. Text, Kendal and Mirick Teaching the Fundamentals. Work will follow the program of the year month by month, introducing problems and features relevant to the season and subject throughout the session. The work will provide specimens of posters and charts.

A question box will be used as means of discussing difficult problems incidental to grade work. One substitute recitation allowed. Class recites four days in the week. Two hours credit.

Course 3.—GRADE METHODS. Open to students who already have two hours credit in grade methods, either in summer-school work or regular semester.

Work is outlined by subjects, each subject being presented by means of outlines calling for library reading, personal experience and individual preparation. State texts will be reviewed and teachers who are willing to make the effort will be enabled to compile a valuable manual for supplementary work parallel with content of state text.

At close of fifth week (July 9) each member of class presents written discussion (500 words), subject chosen from following list:

Suggestion for ten minutes a week for ten weeks in general exercise.
Essentials in playing a game.
Usefulness and uselessness of class criticism.
The psychology of an invitation.
"I'll not teach it that way again."
Outline for sixty-minute program on Lincoln's birthday.
Five handwork projects. (Description, stating cost, time consumed, correlations with textbook work.)
Four seasonable biographies for the grades.
School-room conveniences (at least five).
The teacher's play hour duty.
Devices in connection with music work.
Opportunities (outside school hours) for acquaintance with grade pupils.
Plans for study of current events.
Ten stories every grade teacher should know well enough to relate. (Bibliography given.)

Class recites four days in the week. Two hours credit.

Course 4.—PRIMARY METHODS. Work in this course will be similar to that offered in primary methods during Summer School, 1919, hence course will not open to students who received credit in primary methods from Summer Session, 1919. The course is divided into nine sections, each section including the various lines of work for each month of the school year. We hope to use colored slides in demonstration of work being done in the grades elsewhere. Class recites four days in the week. Two hours credit.

Course 5.—PRIMARY METHODS. This course is provided for those who already have two hours credit in primary methods. Students not having two hours credit in primary methods and who are unable to enroll in Primary Methods, Course 4, may enroll in this course. The course is outlined by subjects, treating each by means of demonstrations, lectures, library readings, charts, and discussions. Class recites four days in the week. Two hours credit. At close of third week (June 25) each member of class presents 500-word discussion of some phase of primary work. These papers become property of the department and may be read before class. In order that students may form some estimate as to range of subjects chosen, the following suggestive list is cited:

Recreation plans.
Through the gates of Storyland.
Christmas in foreign lands.

What I wish the teacher before me had done.
Glimpses into other teachers' schools.
Language in the third grade.
What to do the first day.
The primary teacher's trunk.
Difficulties in teaching spelling.
The primary teacher's notebook.
What a primary teacher ought not to see.
Why school children are so parrot-like.
My first day's experience as a teacher.
Lest we forget we once were primary people.
Things I am going to do when I teach school.
Picture study: its use and abuse.
Elimination of waste in busy work.
Value of construction work.
A "what-not" in every primary room.
Mothers' meeting with the primary teacher before school opens.
The primary teacher I remember best.
Report cards in the primary room.
"An incidental" for every week of school.
Outside activities of the primary teacher.
Aids to punctuality in the primary.
Language and literature before the text is introduced.

Department of Music.

WALTER MCCRAY, Director.
ANTHONY STANKOWITCH, Professor Piano.
ELIZABETH GILBERT, Professor Voice.
RHETTA HESSELBERG, Professor Violin.
ESTHER STEWART, Instructor Piano.
NORA NEAL, Assistant Professor.

This department offers courses as complete as any of the leading conservatories of music. Every teacher in this department is an artist in his special line, which gives pupils advantages they seldom get outside the large cities.

PUBLIC-SCHOOL MUSIC.

Teachers are not only given the training needed for the work of the schools, but may take complete courses for supervisors of school music. Our course not only requires a good knowledge of piano, voice, harmony, counterpoint and sight singing, but each pupil must do practice teaching in the Model School, and directing of school chorus, composed of pupils from the eighth grade of the Model School.

BRASS AND WOOD WIND INSTRUMENTS.

Students desiring to study cornet, clarinet, oboe, etc., have exceptional advantages here, as the teacher of these instruments is a band conductor and trumpet soloist of years of experience. Students must furnish their own instruments, and those more advanced are given ensemble work in the school band and orchestra.

GENERAL INFORMATION.

Students will be admitted to the Department of Music at any time during the year, but advantages are generally better if the entrance is made in September, or at the beginning of the new term, since many of the classes are only organized at the beginning of the semester.

Physical Sciences.

J. A. Yates, Professor.
G. V. Emery, Associate.
W. R. Cleveland, Associate.
Margaret Coventry, Assistant.
William Matthews, Assistant.

The demand for teachers trained in the elements of physics, chemistry and geology is shown by the introduction of such subjects as general science in the grades and in the requirements for county certificates. The beginning courses in the above subjects offer abundant material that one may use in teaching children. These subjects broaden the powers of the teacher, increasing her ability to direct the different types of mind found in her classes.

CHEMISTRY.

NORMAL COLLEGE.

Course 1.—General Chemistry. This course consists of recitations, lectures and laboratory work upon the fundamental principles of this science, together with the application of chemistry to various arts and industries. Among the practical subjects considered are the chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils and varnishes, water, air, fuels, and the elementary principles of chemistry involved in food preparation. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. First term, freshman year. Five hours credit.

Course 2.—Qualitative Analysis. This course consists largely of laboratory work. Emphasis is placed upon the analysis and properties of those substances that are used in the industrial arts, as oils, pigments, paints, varnishes, fuels, and alloys. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Five hours credit.

Course 3.—Quantitative Analysis. This is principally a laboratory course, including both gravimetric and volumetric analysis, supplemented by lectures and recitations. The calibration of glassware and the study of the relation of chemistry to other sciences, along with the various vocations of life, are included in this course. Prerequisite, Chemistry 1 and 2. Two, three or five hours, depending on the amount of work done.

Course 10.—Food Chemistry. A special course for domestic science students. This course consists in the identification of food adulterants and preservatives, the effect of these upon the body, the analysis and relation of the different classes of foods, and includes a study of organic chemistry related to food. Prerequisite, Chemistry 1. Three hours credit.

Course 15.—Methods in General Sciences. This course is planned for grade teachers and consists of easy demonstrations, which may be performed by the teacher to illustrate some of the scientific principles involved in the study of such subjects as air, water, fire, food, clothing, etc. Two hours credit.

Course 16.—History and Methods in Physical Science. This is a course of lectures given by the different teachers in the department. These lectures consist of a nontechnical discussion of the most important discoveries in the physical sciences. The applications of these principles for efficiency is emphasized. One or two hours credit according to the work done. Prerequisite, 15 hours Physical Science.

Course 60.—Textile Chemistry. This course deals with the chemical examination and identification of the different textiles, and a brief study of dyeing. Prerequisite, Chemistry 1. Two hours credit.

Course 61.—Household Chemistry. This course consists in the application of chemistry in the household, involving sanitation, cleaning and removal of stains. Prerequisite, Chemistry 1. Two hours credit.

Course 62.—Physiological Chemistry. This course consists of a study of the chemical changes involved in the cooking, digestion and absorption of foods; the chemistry of the blood and tissues of the body. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Two hours credit.

Course 63.—Chemistry of Nutrition. This course consists of a study of the composition of the different classes of food, their function in nutrition, dietaries and food economy. Prerequisite, Chemistry 1 and 10, and Organic Chemistry. Two hours credit.

GENERAL GEOLOGY.

Course 40.—A course in general geology, leading to three hours credit. This course is planned to acquaint the students with the relations of this subject to our industrial life.

PHYSICS.

Courses 1 and 2.—High-school Physics. A study in recitation room and laboratory of the fundamental principles of physics. Course 1 covers mechanics of liquids and solids, engines, heat, ventilation. Course 2 covers the subject of magnetism, electricity, sound and light. The two courses together constitute one unit credit.

COLLEGE.

Course 23.—Electric Wiring. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved circuits." One hour credit is offered this summer. This course may be elected by anyone not having four hours credit in electric wiring.

Course 26.—Gas Engines II (Automobile Electricity). The practical application of electrical circuits to the modern gasoline automobile. It is devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble hunting in these parts. Two hours credit.

Course 31.—Mechanics and Heat. A laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes the study of stresses in buildings, bridges and derricks, efficiencies, refrigeration, etc. Four hours credit.

Course 33.—Electrical Machinery. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment, rectifiers, transformers, transmission lines, regulating devices, etc. Four hours credit.

Course 71.—Household Physics. A course for girls interested in home economics. It includes an inquiry into physics as applied to the problems of sewage disposal, lighting, heating, ventilating, cooking, house cleaning, laundering, etc. A careful study is made of modern labor-saving, sanitary and economical appliances for the home. Two hours credit.

Teachers' Review Course. A course of lectures and demonstrations covering the entire subject of physics, and especially designed for those wishing to obtain certificates. Five lecture hours per week.

Course 16. This is a course of lectures given by the different teachers in the department. These lectures consist of a nontechnical discussion of the most important discoveries in the physical sciences. The application of these principles for efficiency is emphasized. Two lectures per week. One hour credit.

In addition to the above, the department will offer institute work in general science and physics.

Course 70.—The Teaching of Physics. Practice and theory. Texts, materials and methods form the basis of study. Prerequisite, high-school physics. Two hours credit.

Should there be a sufficient demand for the organization of other classes in the Chemical and Physical Sciences, arrangements will be made for giving the work desired.

Public Speaking and Expression.

Harold F. Schory, Professor.

Every year there is an increased demand for teachers who can present their classroom subjects both clearly and effectively, while in the field of English there is a growing recognition of the superiority of those who can render a truly accurate and artistic interpretation of the best in literature. To meet this justly increased demand the work offered in this department is made thoroughly educational and practical. The department takes the view that having something to say is not sufficient. A clear and accurate knowledge of how to transmit that something to the mind of the hearer is a much more momentous problem. This the department seeks to accomplish by teaching the student how to frame his thought so that it will fall within the radius of the listener's experience and field of interest. The work is so handled that this principle is made as important to the teacher in presenting all his subject matter as it is to the one who chooses to use it for the professional platform.

Course 1.—Public Speaking. Two hours credit. This course reviews the fundamental principles of vocal technique and embraces a survey of the several forms of spoken discourse. Much practice is given the student in the preparation and delivery of his own thought before an audience. In this course freedom to think on your own feet before an audience is gained in a very short time. Special attention is given to the teacher of reading and oral English in the public schools.

Course 5.—Literary Interpretation. Two hours credit. This course deals with the vocal interpretation of some of the best in literature, setting forth the principles of true interpretation. By the practical application of these principles the student learns how to acquire and to present a glimpse of life as set forth in the pages of the best literature without intruding the individuality or opinions of the reader.

Course 9.—Dramatics. Two hours credit. Recognizing in the drama the greatest medium for the representation of life with its many joys and sorrows, this course is designed for those students and teachers who are especially interested in the histrionic art with its ethical and intellectual appeals. The qualities which make for a good acting play, together with the principles of dramatic technique, are discussed and emphasized by numerous citations from modern, Shakespearean and classic drama. Lectures embrace a consideration of plot and character possibilities as well as practical demonstrations in the use of stage properties, mechanics, make-up, etc. As a laboratory for the practical application of principles learned in this study a play will be cast and staged in the course of the summer.

Physical Education.

G. W. WEEDE, Director for Men.
BERTHA BENNETT, Director for Women.
PAUL J. ALYEA, Assistant Director.
ETHEL MAE HILL, Assistant Director.

RECREATION. Several lines of recreation are being planned for the summer students. A baseball league will be formed and a schedule of twilight games played if the summer students desire. Tennis and volley ball tournaments and a track meet will be held, to which all students are eligible. The recreative and social side of these games will be emphasized.

Course 1.—PLAY AND PLAYGROUND METHODS. A course for teachers who supervise the school playground. Games, both light and strenuous, will be taught. Two hours credit.

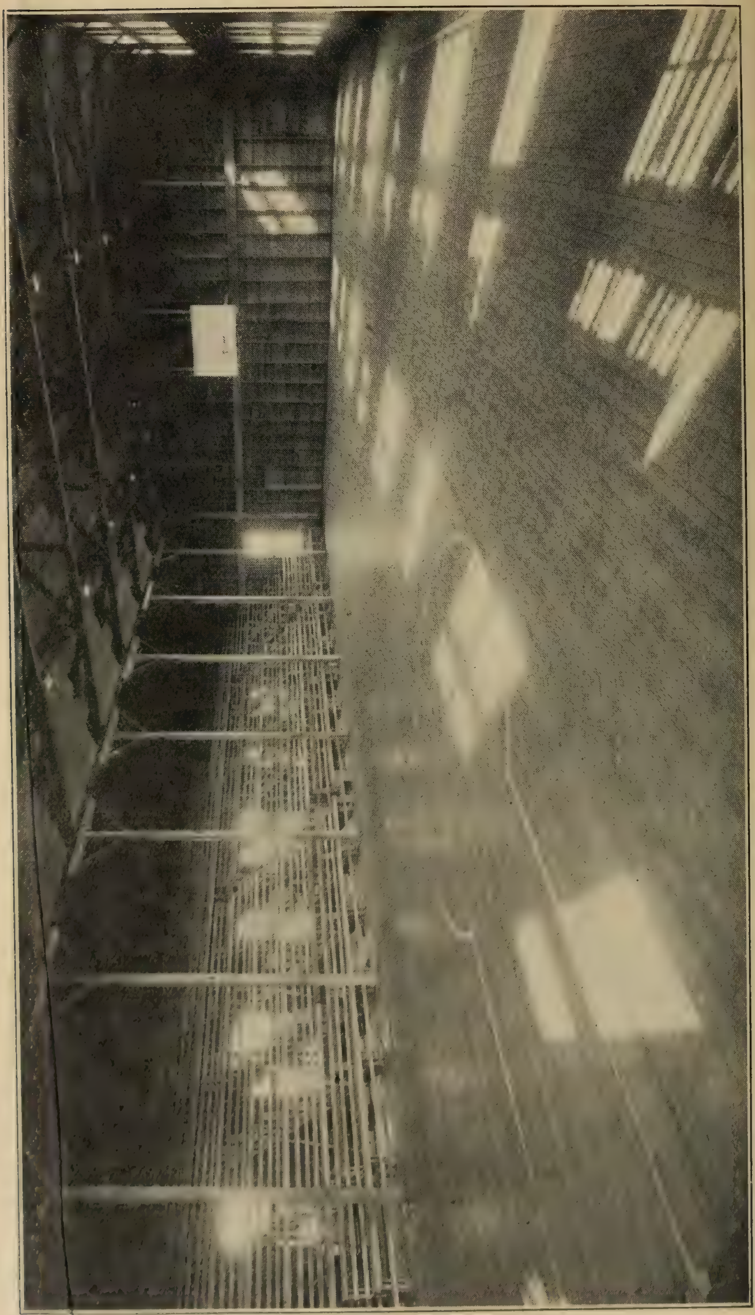
Course 2.—HIGH-SCHOOL COACHING METHODS. For men who direct and coach athletics in high schools.

(*a*) *Football:* Fundamentals and systems of play. Lectures and demonstrations. One hour credit.

(*b*) *Basket Ball:* Fundamentals and systems of play. Lectures and participation. One hour credit.

(*c*) *Track:* Methods of training men for each event. Diet in training and amount of work. Lectures and demonstrations. One hour credit.

(*d*) Classes will be organized in baseball, tennis and other allied sports, should a demand be felt.



A CORNER IN THE TEMPORARY GYMNASIUM.

SECTION VIII.

Extension Division.

L. A. GUTHRIDGE, *Director.*

General Information.

The State Manual Training Normal School has a well-developed and well-organized extension department, with a director in charge whose entire time is devoted to its further development and usefulness.

The work of this department is proving of great value to teachers in the service and to others contemplating entering the profession. While hundreds of teachers have availed themselves of the opportunity to begin a college course or continue one to completion after it has been once begun, still there are many persons in and out of the profession who are unaware that by carrying some form of our extension work throughout the winter months and supplementing it with work in residence here at the Normal during the summer term, in a very short time they can be well along toward a life certificate or even a degree.

It is the desire of this institution to extend its services to the greatest number possible. This is a state school—your school. If circumstances prevent you from pushing the gates of the campus inward so that you may enter and enjoy the benefits and privileges afforded resident students, all you need do is to send forth a call and the gates will swing wide open to allow the Normal to come to you. Its location in the center of a network of interurbans and steam railways, furnishing easy and rapid transportation for students and faculty, together with the rural free delivery of mail, makes it possible for us to reach a larger number. In fact, your Normal is as near to you as your mail box.

The members of the regular faculty, including the heads of departments, constitute the extension faculty, so you are assured the same high grade of instruction you would receive if the work were done in residence. Students doing work through this department are expected to meet the same standards and degree of efficiency as students enrolled in the Normal, and as the courses are identical, they receive the same credit for completed work.

CORRESPONDENCE COURSES.

We are unable to offer as many courses by correspondence as are offered students in residence, because the very nature of some of the courses excludes them from this method of study and instruction, and because of the large amount of class-extension work being done by the department.

CLASS EXTENSION.

Class extension is really correspondence work plus the personal touch of the instructor who meets the class regularly every week or every two weeks, at the place in which the class is organized. This method is followed where a sufficient number desiring the same work, organize and ask for an instructor. This is proving not only a very effective method but is becoming so attractive the Normal is being forced to increase its faculty to meet the demand for this kind of service.

The minimum number required for an extension class varies with the distance from the Normal and the ease of access. The number required for any particular place will be stated when requested.

Application for an extension class should be made early as it is important that these classes should begin on a regular date as well as the work at the Normal. Owing to the increased demand, classes whose enrollment cards and fees are first to reach the department will receive first consideration.

SATURDAY WORK.

Courses in which laboratory work is required are offered to such students as find it possible to reach the institution on Saturday and spend the day in the laboratories. The laboratories are open and competent instructors are provided for this work.

OPPORTUNITY CLASSES.

The evening vocational school or night school, as it is usually called, is maintained for the benefit of those who have to work for a living during the day. The work is directed and taught by the regular members of the faculty assisted by practical men from the industries. We now have classes organized in electrical work such as electrical machinery, automobile electricity, armature winding, and radio work; steam engineering, mining, drafting, machine-shop practice, automobile mechanics, shop mathematics, commerce, dressmaking, millinery, cooking, meal serving, home management, home nursing, and household budget making.

Our extensive and splendidly equipped shops and laboratories afford the best of opportunities for busy people to become more efficient.

The enrollment increases from term to term and new subjects are offered whenever there is a sufficient demand.

INFORMATION BUREAU.

A general information bureau is maintained for the benefit of people in every walk of life who may have interesting and important questions arising. Feel free to write us for all kinds of information.

AMOUNT OF WORK.

No student is supposed to carry more than four hours per semester by correspondence, class extension or Saturday work, but since we offer two-, three- and five-hour courses, one may enroll for as much as five hours the first semester by paying the fee for that amount of work. The second semester's work will be limited so as to allow only the maximum of eight hours for the school year.

FEES.

Students doing work by correspondence, by extension or on Saturday will pay the following fees: Four hours or less, $5.

Students are required to pay postage, in full, on manuscripts.

Nonresident students (those living without the state) will pay a flat fee of $15 for the year, and are permitted to carry not to exceed the maximum of eight hours.

Fees when received and receipted for must be turned into the state treasury and therefore cannot be refunded because of the inability of the student to do the work.

Remittance may be made to suit your convenience, but safety should be taken into consideration. All checks, drafts and money orders must be made payable to S. M. T. N. Do not register mail—it only delays matters, for registered mail is not delivered and the post office is two miles from the Normal.

WHEN WORK MAY BEGIN.

Students may begin correspondence courses any time after September—it being understood that the maximum amount of work will not be allowed after November 1; that enrollment will not be accepted after

February 15 and that all work must be completed by May 15, unless time is extended on account of sickness of student.

Early enrollment, a definite schedule for systematic study, and regularity in the return of manuscripts is recommended.

Not more than two courses may be carried by correspondence at one time. As a rule, it is much better to finish one course before beginning another.

No correspondence or class extension work will be offered during the summer term.

A special extension bulletin giving detailed information as to courses, credits, fees, amount of work that can be taken, how and when to enroll, will be issued the first of July. Those interested in any phase of the extension work should write directly to the Extension Department for this bulletin as early as possible.

AUGUST SESSION.

Last year, for the first time, the State Manual Training Normal conducted an extra session during the month of August to meet the demand from those needing additional credits for certain required certificates and those who for various reasons were prevented from attending the summer term.

The attendance was beyond expectation.

The work offered for August, 1920, is as follows:

Hygiene & Public Health. Three hours.
Economic Entomology. Two hours.
School Administration. Three hours.
Introduction to Education. Two hours.
Current Literature. Two hours.
Shakespeare. Three hours.
Commercial Geography. Three hours.
Physiology. Two hours.
American History II. Two hours.
Industrial History. Three hours.
College Algebra, Course 3A. Two hours.
Solid Geometry, Course 2. Two hours.
Teaching Elementary Mathematics. Three hours.
Cabinet Making. Two hours.
Drawing. One hour.
Printing. Two hours.
Wood Turning. Two hours.
Automobile Mechanics. Two hours.

It will be possible for advanced students to take a maximum of five hours. The classes will meet double periods each day and more days in the week than in the regular term, so as to give the required number of hours of recitation for the two or three hours credit offered. A fee of five dollars will be charged.

The session will open August 9, and close September 3.

SCHEDULE FOR AUGUST SESSION.

Time.	Biology.	Education.	English.	Geography.	History.	Mathematics.	Manual Training.
8:10-10:10	Hygiene and Public Health.	School Administration.	Shakespeare.	Commercial Geography.	Industrial History.	Teacher's Elementary.	...
10:10-12:10	Economic Entomology.	Introduction to Education.	Current Literature.	Physiography.	American History.	College Algebra. Solid Geometry.	...

All subjects offered in class meeting for 8:10 to 10:10 are three-hour subjects and the classes meet on Monday, Tuesday, Wednesday, Thursday, Friday and Saturday of each week.

All subjects offered in classes meeting from 10:10 to 12:10 are two-hour subjects and the classes meet on Monday, Tuesday, Wednesday, Thursday, and Friday of each week.

Some change may be made in this schedule if it is found advisable.

For further information write the director of the Extension Department, L. A. GUTHRIDGE.

Courses of Study.

Agriculture.

BY EXTENSION OR CORRESPONDENCE.

Course 1.—RURAL-SCHOOL AGRICULTURE. This course is designed to meet the needs of those who are preparing to teach in the grades and rural schools. Practical experiments and demonstrations will be outlined for each grade. Two or four hours credit.

Course 2.—GENERAL AGRICULTURE A course in which a general survey of the whole field of agriculture is taken. This course is planned especially for the students who wish a general introduction to this great industry. Three hours credit.

Biology.

O. P. DELLINGER, Professor.
W. E. RINGLE, Associate Professor.

BY EXTENSION.

Course 1.—GENERAL BIOLOGY. This course is an introduction to the other biological sciences, and aims to acquaint the student with the elementary forms and forces of living nature. Here the student gets his first glimpses of the laws of evolution and heredity as they apply to human progress. Much attention is paid to the evolution of conduct of life. Types for study are selected as far as possible from the common animals. Three hours credit.

Course 14.—NATURE STUDY. This course is designed especially for primary and grade teachers. It attempts to answer the question, What knowledge of living form is adapted to children between the ages of six and fifteen? A review of the literature in this field is also given. Two or four hours credit.

Course 17.—HYGIENE AND PUBLIC HEALTH. A course in elementary bacteriology designed especially for grade and rural teachers. The course is a general survey of the field of bacteriology as it relates to civic and school sanitation, agriculture and the preservation of foods. The student becomes familiar with immunology and the physiological factors involved in the natural resistance to disease. Three hours credit.

Course 18.—VOCATIONAL HYGIENE AND SANITATION. A course designed especially for the students in industrial arts. The principles of hygiene and sanitation as related to the industries and the men in industrial work form the basis of this course. One hour credit.

Course 65.—SOCIAL BIOLOGY. In this course the part biology has played in the development of the race is studied, especially the relation of biology to medicine, agriculture and education is emphasized. There are five books to be read and reviewed. Four hours credit.

BY CORRESPONDENCE.

Course 17.—HYGIENE AND PUBLIC HEALTH. A course in elementary bacteriology designed especially for grade and rural teachers. The course is a general survey of the field of bacteriology as it relates to civic and school sanitation, agriculture and the preservation of foods. The student becomes familiar with immunology and the physiological factors involved in the natural resistance to disease. Three hours credit.

Course 53.—EUGENICS. The course is especially designed for domestic-science students, but is open to all students of college grade. A careful review of the literature on heredity and eugenics is given, together with a study of the law of reproduction. Two or four hours credit.

Course 65.—SOCIAL BIOLOGY. From the outline you will notice there are eleven different topics coming from a wide range of books. The student will be expected to buy one of these books, the remainder will be loaned from the library. Each assignment is to be read and a review made of that reading.

SATURDAY WORK.

Course 1.—GENERAL BIOLOGY. This course is an introduction to the other biological sciences, and aims to acquaint the student with the elementary forms and forces of living nature. Here the student gets his first glimpses of the laws of evolution and heredity as they apply to human progress. Much attention is paid to the evolution of conduct of life. Types for study are selected as far as possible from the common animals. Three hours credit. Laboratory fee for material used.

Course 2.—GENERAL BIOLOGY (continued). In this course the student studies the laws of growth and reproduction of living organisms as they are illustrated in plants. Here emphasis is given to the economic phases of botany. Plants are studied in their relation to medicine, textiles, lumber, ornamentation and food production. Attention is given to propagation and distribution. Three hours credit. Laboratory fee for material used.

Course 16.—GENERAL BACTERIOLOGY. This course is required of all students who major in domestic science or agriculture, and is open to any student in the college course. It is a general introductory course consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit. Laboratory fee for material used.

Commerce.

E. F. SHOLTZ, Professor.

BY CORRESPONDENCE.

Course 4.—BUSINESS LAW. Utility of the subject. Sources and authority of our laws. Contracts, bailments, sales, negotiable instruments, credits and loans, guaranty and surety, agency, partnership, insurance and corporations. Two hours credit.

Course 8.—COMMERCIAL GEOGRAPHY. See Geography.

Drawing and Design.

LYLE BROWER, Professor.

BY CORRESPONDENCE.

These correspondence courses in drawing are intended to fill the need of teachers who may wish to secure special technical training which will be of direct benefit to them in their work; for prospective college students who may desire to receive advance credit; for regular students who may wish to continue their college work by home study. It will also serve those who may have some interest in the subject and who have been unable to secure the training which would enrich their knowledge of drawing. Satisfactory results can be secured through correspondence work, for much depends upon personal work and individual instruction elements which can be emphasized when the lesson papers are sent in for criticism. The outlines give specific methods in presenting the subject, so that the student will secure a technical training which will enable him to carry on the assigned problems. They will teach how to control the hand in acquiring the skill in execution which will enable the average person to make adequate progress.

These courses are intended for teachers and workers rather than for artists; but any one who has perseverance and ability will be able to gain a knowledge of what is good and what is bad in design. One will gain power in his ability to do. Whether he be a teacher of drawing, of academic subjects, of woodwork or iron, he will be better able to incorporate the true spirit of craftsmanship into the materials with which he works.

Students should realize that work done early in the year will lead to more successful results, for if the work is delayed, and finished during the last few weeks, the result will be unsatisfactory, both to the student and to the instructor. No students will be accepted in this department after November 1 of the school year.

The following courses are offered, outlines are furnished for the lessons, and suitable textbooks are required wherever they will aid in making the instruction clear to the student.

Course 1.—ELEMENTARY DRAWING. A course in free-hand drawing, which aims to cultivate the sense of proportion and to give the student facility with the use of the pencil in form study, lettering and sketching of school projects, furnishings and decorations. Every effort is made to give a thorough training in the fundamental principles underlying free-hand drawing. One hour credit.

Course 3*c*.—SPECIAL DRAWING SUPERVISION. For teachers in the public schools who are without drawing supervisors. Suggestive outlines for work are supplied each month of the school year, giving references relating to materials, supplies and work possible in the school room. One hour credit.

Course 9.—THEORY OF COLOR. A study of color tending to develop and refine the color sense that the student may see, appreciate and enjoy the colors in nature and be able to use color with greater understanding. Primary colors in full intensity, subdued colors, tints, shades, hues and complementary colors; harmony through analogy and contrast. Physical and psychological effects of color. Two hours credit.

Course 12.—ARCHITECTURAL DRAWING. A practical course in the reading and making of architectural plans, which bears directly on the requirements of the professional builder, and wherever possible the study is correlated with some house under actual construction. Free-hand drawing to scale of standard moldings and structural detail, with architectural conventions and lettering; sketching of simple house-plans, with study of effective arrangement of rooms, openings, conveniences, heating and lighting. Elevations of the house, with study of proportions and adaptations to the plan; treatment of form in relation to the structural demands in value and contrast of detail. One hour credit.

Course 16*a*.—SHADES AND SHADOWS. A course for the student who expects to teach mechanical drawing. The orthographic projections are made to take more definite form in the mind of the student by determining the shade lines and casting the shadow of the represented model. One hour credit.

Course 16*b*.—PERSPECTIVE. The theory of perspective with mechanical vanishing points is applied to the representation of shop projects and exterior and interior views of buildings. Especially valuable to students of architectural drafting and interior decoration. One hour credit.

Course 18.—ARCHITECTURAL DESIGN. The designing of a modern residence with reference to its location, plan, convenience, sanitation, heating, lighting, and materials. Working plans and elevations, with detail drawings of special interior and exterior constructions. The instructions must conform to the actual practice in building operations. Each student is expected to design a house which he would build for himself. Other constructions, as schoolhouse, barn, etc., may be substituted or included. Prerequisite, course 12. Two hours credit.

Course 29.—WATER COLOR. A special study of rendering in pure water color. Models in simple full washes of monotone; vase form with rounded effect in color; flower sprays from copy and from still-life. Landscape studies from copy indoors, and outdoor sketching of simple landscapes and street scenes. Two or four hours credit.

Education.

D. M. BOWEN, Professor.
EDGAR MENDENHALL, Professor Rural Education.
FRANK DEERWESTER, Associate Professor.

A minimum of twelve hours in education is required for a life diploma to teach in the elementary schools and the junior high schools of Kansas. A minimum of twenty hours is required for the B. S. degree in education. A major of thirty hours, exclusive of teaching, may be selected in education and a minor of twenty hours in any other department in which a major is offered.

JUNIOR COLLEGE COURSES. Course 1, Elementary Education; course 2, History of Education; course 5, Social Principles in Education; course 8, Child Psychology; courses 1-1*b*, General Psychology; course 7, Stories and Literature; course 6, Kindergarten Theory; course 3, Rural Education; course 4, Current Educational Problems; course 9, Principles of Education.

SENIOR COLLEGE COURSES. Course 51, Administration; course 52, Educational Measurements; courses 54, 55, 58, Secondary Education; course 57, Educational Psychology; course 59, Philosophy of Education; course 50, Rural Education; course 56, Social Psychology.

BY EXTENSION.

Course 2.—MODERN EDUCATION. A course that traces the movements and influences that have brought about the present ideals and practices in education, with emphasis on current educational problems. Three hours credit.

Course 3.—RURAL EDUCATION. This course is primarily for beginning teachers, and teachers of limited experience and training. The organization of the rural school, the making of the program, problems of school discipline, school-room decoration and equipment. The rural-school playground will receive due consideration. Three hours credit.

Course 5.—SOCIAL PRINCIPLES IN EDUCATION. A course in educational sociology, dealing with the social laws and principles governing education. A socialization of the school, its administration, course of study, methods, and discipline. A discussion of the school as an instrument for social efficiency. Open to sophomores. Two hours credit.

Course 8.—CHILD PSYCHOLOGY. The aim of the course is to acquaint students with the most important established facts and principles of mental and physical growth of the child; to enable students to recognize types and individual differences among children; to notice, interpret and deal properly with certain defects; to cultivate an intelligent sympathy with children. Two hours credit.

Course 52.—EDUCATIONAL MEASUREMENTS. An application of the principles of scientific management to the problems of the school; measuring the child, his physical and mental efficiency; the latest scientific tests for measuring the product of teaching arithmetic, English composition, handwriting, drawing and other school studies. Prerequisite, four hours Psychology. Three hours credit.

Course 57.—EDUCATIONAL PSYCHOLOGY. This course deals with the application of psychological principles to education. The laws of learning; the amount, rate and limit of improvement; the factors and conditions of improvement; mental discipline; mental fatigue; individual differences and their causes; and original tendencies of man. Discussions, outlines, readings and reports. Course in General Psychology prerequisite. Three hours credit.

BY CORRESPONDENCE.

HISTORY OF EDUCATION. A complete course in the history of education, including ancient, mediæval and modern times. Open only to students holding the life certificate or its equivalent. Four hours credit.

Course 51.—SCHOOL ADMINISTRATION. A study of the larger problems of administration; the relation of the state to education; the various units of school organization—district, township, county, state and nation; the various administrative officers, their powers and duties; the teaching staff and present tendencies of education administration in America. Offered spring semester. Three hours credit.

Course 54.—ADMINISTRATION OF SECONDARY EDUCATION. The purpose of this course is to introduce the student to the vital problems of secondary education; the administration of secondary schools, courses of study, organization and management, social factors, school government and material equipment. Two hours credit.

English.

Ermine Owen, Professor.

BY CORRESPONDENCE.

The Short Story.—An intensive study of the short story as to plot, characterization, visualization. A study of A. E. Cross's text, "The Short Story," published by A. C. McClurg & Co., Chicago, Ill. Those who take the course will send for the book and outline the first seven chapters, then outline the first ten stories according to the plans and principles presented in the first seven chapters. Two hours credit.

BY EXTENSION.

Literary Appreciation.—A course based on S. H. Clark's "The Interpretation of the Printed Page." Some masterpieces of prose and poetry will be read in an effort to achieve a high appreciation of their merit through an application of the theory and method set forth in Mr. Clark's book. Two hours credit.

Geography.

Eulalia E. Roseberry, Professor.
Zoe A. Thralls, Assistant Professor.

BY EXTENSION OR CORRESPONDENCE.

Course 2.—Industrial Geography. This course includes geography of agriculture, textiles, food products, minerals, manufactures, fishing, lumbering and commerce. It is designed to correlate with other industrial subjects. This course is one of the most practical courses offered for teachers actively engaged, as it supplements all other courses, and has workable material for all grades. Three hours credit.

Course 3.—Geography of American History. This course is designed especially to correlate with the American history courses, and consists of a study of geographic conditions which have influenced the course of American history, and of their importance as compared with one another and with nongeographic factors. Three hours credit.

Course 4.—Geography in Primary Grade Work. This course is designed especially for teachers of nature study and of primary grades, and for those doing departmental work in geography. The work consists largely of selection and adaptation of material best suited to the first four grades and to the method of presentation. Three hours credit.

Course 5.—Geography in Intermediate and Grammar Grade Work. This course encompasses subject matter and methods for the grades above the fourth, and is designed for grade and rural teachers and those doing departmental work in geography. Two hours credit.

Course 6.—Commercial Geography. This course is organized to give the student a scientific knowledge of the three distinctive sets of controls—the natural, the human, and the economic. It correlates not only with the other commercial courses, but with the industrial subjects as well. Three hours credit.

Course 8.—Topography. This course gives opportunity for studying mapped areas in detail, as to relief, drainage and cultural features. One, two or three hours credit.

Course 11.—The Geography of North America. Every teacher should have an accurate and extensive knowledge of the geography of

North America. This course will consist not only of an intensive study of the geographic controls of the continent as a whole, but also of an intensive study of Canada, United States and Mexico, the geographic factors that have influenced their development, their present commercial and industrial status, and their future possibilities. This course will furnish a scientific basis for the study of other continents and also illustrate the best methods of teaching these units to grade pupils. Three hours credit.

Course 51.—THE GEOGRAPHY OF SOUTH AMERICA. Present-day conditions have created a demand for information concerning our South American neighbors. The course is designed to answer this demand. Some of the topics considered are: The surface features, climate, resources of South America; the historical background of the republics; the factors upon which rest the commercial and industrial development of the various nations; their present status; the basis and character—present and future—of trade between United States and South America; what opportunities there are in South America for Americans.

One of the chief difficulties in the way of the best understanding, commercially and politically, between the United States and the South American republics has been our ignorance concerning conditions there. The National City Company of New York and other companies with large interests in South America have found it necessary to establish classes to give their employees sufficient knowledge of the geography of South America to carry on their business intelligently. This course is designed to answer this demand from business as well as to supply the teachers with accurate and interesting information for their work. Three hours credit.

Course 52.—GEOGRAPHY OF EUROPE. Every teacher should have a knowledge of the elements underlying the relationship existing between ourselves and the nations of Europe. Our increased interest in the European nations demands that not only the teacher must have this knowledge but should be able to teach it to the future voters and statesmen of our nation. This course has been organized for the purpose of putting the teachers in touch with subject matter in such a manner that they may become as familiar with the situations in the countries of Europe as with those of the United States. Our new responsibilities demand that our teachers must give more attention to this problem than they have in the past. Three hours credit.

Course 55.—CLIMATOLOGY. This course considers in addition to climatic causes and effects in general the climatic regions of the United States and the continents and their relation to physiographic features, climate as a modifying factor of crops, animal life and people of the country. Three hours credit.

History and Social Science.

G. W. TROUT, Professor History and Social Sciences.
O. F. GRUBBS, Associate Professor.
J. W. BOWERS, Associate Professor.
ANNE CASELEY, Assistant Professor.

This department is trying to serve the needs of our constituency as broadly as possible. However, the number of courses which we can offer is somewhat limited by the large amount of organized extension work the department is doing.

CORRESPONDENCE.

Course 1.—GREEK HISTORY. A general survey of ancient Greece from the earliest period to its conquest by Rome. The course consists of sixteen lesson assignments based upon a textbook, and a review of one other book. Two hours credit.

Course 2.—ROMAN HISTORY. This course takes up Rome at the earliest date and follows her career to the fall of the western empire. The course consists of sixteen lesson assignments based upon a textbook, and a summary of one other book. Two hours credit.

Course 3.—MEDIÆVAL HISTORY. A survey of western Europe from the fall of Rome to the opening of the Renaissance. The course consists of twenty-four lesson assignments based upon two textbooks. Three hours credit.

Course 4.—MODERN HISTORY. A brief course in the history of western Europe from opening of the Renaissance to the outbreak of the French Revolution. The course consists of twenty-four lesson assignments based upon a textbook, and an outline of one other book. Three hours credit.

Course 5.—ENGLISH HISTORY. A general survey of the whole range of English history down to the present time. The course consists of forty lesson assignments based upon two textbooks, and one or more themes on phases of current English life. Five hours credit.

Course 56.—MODERN EUROPE. A brief view of nineteenth century Europe since the Congress of Vienna. The course consists of sixteen lesson assignments from one textbook. Two hours credit.

Course 51.—INDUSTRIAL HISTORY OF UNITED STATES. A careful study of our natural resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to present times. This course consists of thirty-two lesson assignments based upon one text and parts of two others. Four hours credit.

BY EXTENSION.

Course 5.—ENGLISH HISTORY. A general survey of the whole range of English history down to the present time. Special attention to rise of English government and institutions and their relation to our own. Outlines will be used and special readings assigned, papers prepared and presented. Five hours credit.

Course 6.—AMERICAN HISTORY I. This is a thorough college course covering the subject of American history for mature students and teachers who may want to strengthen themselves in the teaching of the subject. Four hours credit.

Course 51.—INDUSTRIAL HISTORY. A careful study of our national resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to present times. Besides the use of a text the students are required to prepare papers and read them before the class for discussion. Three hours credit.

Course 52.—ECONOMICS. This course deals with the theories and principles of man's activities in the satiation of human wants. It applies these principles and theories to the production and consumption of wealth. It aims to lay well the foundations for advanced work along this line. Considerable library work is required. Special subjects assigned to individual students for investigation and reports to the class. Five hours credit.

Course 7.—CONSTITUTIONAL HISTORY. A study of the evolution of the American constitution, its interpretation and application to the times. Two hours credit.

Course 53.—POLITICAL SCIENCE. In this course we study the theories and functions of the modern state as exemplified in the leading nations of the world. Also careful observation of likenesses and differences of these states. Two hours credit.

Course 56.—MODERN EUROPE. Beginning with 1789, governmental change and progress of the countries of Europe are studied. Special emphasis is laid upon the rise of popular governments, the formation of political parties and the limitation of monarchies. Two hours credit.

Course 57.—TEACHING HISTORY. Open to all students majoring in history or those who have had at least fifteen hours in history and expect to teach it. Two hours credit.

Course 60.—HISTORY OF THE REFORMATION. This course is preceded by a brief survey of the rise of the Christian Church, its institutions and doctrinal development. Special emphasis is laid upon the causes leading to and the great agents employed in the Reformation. Three hours credit.

Course 63.—AMERICAN HISTORY II. This course covers the period from 1750 to 1829. It is a study of those forces and events which helped to create a national ideal and a national spirit. It deals with those contributions and political problems from within and from without which tended to weld our people into one sovereign state. Two hours credit.

Course 64.—AMERICAN HISTORY III. This course is a study of the difficulties and dangers threatening the life of a nation, together with the forces that contributed to our marvelous progress. It covers the period from 1829 to date. Two hours credit.

Course 58.—SOCIOLOGY. An introductory study of the nature, function and development or progress of society. The aim is to familiarize the student with society and some of its problems and cultivate a desire to aid in the solution of these problems. Three hours credit.

Course 59.—APPLIED SOCIOLOGY. In this course we endeavor to apply the principles of sociology to present-day problems. Course 11 is a prerequisite. Two hours credit.

Course 67.—LATIN AMERICA. A brief study of the history and traditions of our neighbors to the South—Mexico, Central and South America, with emphasis upon their social, racial and economic development, and their relation to Europe and to the United States. Two hours credit.

Course 70.—EUROPE FROM 1870 TO DATE. This course is to take up the political problems of Europe since the formation of the German empire and study these in reference to the late Great War. Two hours credit.

Course 21.—CIVIL GOVERNMENT IN THE UNITED STATES. The purpose of this course is to study the structure and functions of the government of the United States, local, state, and national. Such topics will be considered as the constitutional development of American government, the powers and activities of various organs of government and administration, and proposed reforms within the field of American government. Special emphasis will be laid upon the relation of American state governments to contemporary economic and social problems. Five hours credit.

Course 68.—RURAL SOCIOLOGY. A study of rural life in its relation to its social centers, with special reference to the rural church, school and other social centers. Two hours credit.

Course 69.—FINANCIAL HISTORY OF UNITED STATES. A brief review of the methods of raising revenue in United States, the nature of the circulating medium and the relations of our banking systems to our national life, past and present. This course coördinates with course 51. Two hours credit.

Industrial and Applied Arts.

A. H. WHITESITT, Professor.
VIVIAN ATWOOD, Assistant Professor.
C. R. WASSER, Assistant Professor.

BY EXTENSION.

ARTS AND CRAFTS.

Course 1.—ART LEATHER. This craft presents unlimited possibilities and the work possesses the charm of variety that is given to original design. The processes of tooling, modeling and coloring will be taught in executing designs on useful articles. Two or four hours credit.

Course 4.—ELEMENTARY BASKETRY. Making of simple pieces in reed and raffia, in which design is an important feature. Two hours credit.

Course 5.—ADVANCED BASKETRY. Advanced problems in reed and raffia, and pine needle and Japanese matting baskets. Prerequisite, course 3. Two hours credit.

Course 6.—BOOKBINDING. Includes simple problems in portfolio, notebooks, blank books, the binding of magazines and the mending and rebinding of books. Two or four hours credit.

Course 7.—ELEMENTARY CLAY WORK. This course involves the making of tiles, bowls, vases, etc., by building piece upon piece, also modeling in mass. Two hours credit.

BY CORRESPONDENCE.

VOCATIONAL GUIDANCE. The time is at hand when more than mere ability to impart information is demanded of the teacher. The man or woman who has an understanding of the problems and difficulties which face the student when making the transition from the life of the school to that of self-support, and who has the information which enables him or her to assist the boy or girl when making this adjustment, has an opportunity to render a great social service to the boys and girls of the community.

The purpose of this course is to give an insight into the theory and practical working of this field. Elective. Two hours credit.

Course 4.—FURNITURE DESIGN. The dominating purpose throughout this course is to stimulate in the student a conception of furniture as an expression of beauty. The course consists of a series of problems from the design of simple chairs and tables to more complex types of furniture. Emphasis is placed upon the development of types with modern adaptations. Rendering in colors is a feature. Prerequisite, courses 1*a* and 1*b*. Two hours credit.

Course 3.—PROJECTION DRAWING. Analytical study of orthographic projection of line, points and solids. Fundamentals of projection are emphasized in problems dealing with revolutions, sections, intersections and surface developments—pattern development suitable for use in sheet metal work.

A study of pictorial projects such as isometric, oblique or Cavalier and cabinet projection. Prerequisite, course 1. Two hours credit.

Course 5.—Elementary Machine Drawing. A study of standard bolts, nuts, screws, keys and pins with their standard conventions. Use of tables and machinist and engineer handbooks. Drawing of machine parts, such as hand wheels, eccentric sheave, engine crank, connecting rod end, crane hook, clutch coupling, piston rod stuffing box, etc. Execution of working sketch of casting on regular cross section paper, followed by working, tracing and blue print.

Study of car motions and simple elementary gearing. Prerequisites, courses 1 and 2. Two hours credit.

Course 6.—Advanced Machine Drawing. A course planned to meet the needs of those who teach in the more advanced high schools and those who may wish to engage in commerical shop drafting. The course deals largely with the theory applied in practical work in the transmission of power by means of belt and rope drives, cams and crank motions, gears—spur, rack and pinion, worm gear, internal gear; graphics, and the design of special apparatus. Prerequisite, courses 3 and 4. Two hours credit.

Foreign Languages.

Samuel J. Pease, Professor.
Ernest Bennett, Assistant.

BY EXTENSION.

French 1 (*a*) Fraser and Squair: Shorter French Course, lessons 1 to 30. About fifty pages of easy reading. Three hours credit.

French 1 (*b*) Fraser and Squair: Lessons 31 to 52, with the commoner irregular verbs. About 100 pages of easy reading. Three hours credit.

Latin 11. Latin in English. An introductory study, from the historical standpoint, of the universality of the influence of Latin on modern thought and language, especially on English vocabulary, orthography, grammar, rhetoric, literature, science, law and government, art. Lectures, exercises, assigned readings. Two hours credit.

Spanish 1 (*a*) Hills and Ford: First Spanish Course, lessons I to XXVI. Bransby's Reader, about 40 pages. Three hours credit.

Spanish 1 (*b*) Hills and Ford and Bransby completed. Additional reading. Three hours credit.

Course 7.—Outline of Spanish Literature. Text: Fitzmaurice-Kelly's Spanish Literature. Lectures alone, open to all, one hour credit; with readings in English or Spanish, three hours credit.

Course 8.—Outline of Latin-American Literature. Text: Coester's Literary History of Spanish America. Lectures alone, open to all, one hour credit; with readings in English or Spanish, three hours credit.

Any other course in the department will be given on sufficient demand.

Not more than three hours credit may be given for any one course by extension.

BY CORRESPONDENCE.

French 1.—Elementary. Five hours credit. Open only to those who have a speaking knowledge of the language.

French 2.—Intermediate. Five hours credit. May be divided: three hours grammar and composition, two hours reading and exercises.

French 3.—Modern Writers. Three hours credit.

FRENCH 4.—CLASSICAL DRAMA. Three hours credit.

FRENCH 9.—SCIENCE. Two hours credit.

LATIN 5.—LIVY. Three hours credit.

LATIN 6.—CICERO'S PHILOSOPHY AND LETTERS. Three hours credit.

LATIN 7 AND 8.—HORACE. Odes and epodes, two hours credit; satires and epistles, two hours credit.

LATIN 51.—SUPPLEMENTARY LATIN AND COMPOSITION. Two hours credit.

SPANISH 1.—ELEMENTARY. Five hours credit. Open only to those who have a speaking knowledge of the language.

SPANISH 2.—INTERMEDIATE. Five hours credit. May be divided like French 2.

SPANISH 3.—SPANISH-AMERICAN LITERATURE. Three hours credit.

SPANISH 4.—COMMERCIAL SPANISH. Three hours credit.

SPECIAL NOTE.—Mature students may apply any course numbered 1, 2, 3, or 4, on entrance credit. Other courses will be given informally to advanced students.

Mathematics.

J. A. G. SHIRK, Professor.
C. O. VAN DYKE, Associate Professor.
C. W. WRIGHT, Assistant Professor.

BY CORRESPONDENCE.

Course 1.—PLANE GEOMETRY. The general properties of plane rectilinear figures; the circle and the measurements of angles; regular polygons; solution of numerous original exercises and practical problems. Open only to students not offering geometry for entrance. Three hours credit.

Course 2.—SOLID GEOMETRY. Elements of solid geometry; properties and measurements of surfaces and solids. Open to all students not offering solid geometry for entrance. Two hours credit.

Course 3.—ADVANCED ALGEBRA. This course corresponds to the work of algebra III of a high school, and is open only to those students who have not taken algebra III in their high-school course. It includes a review of linear and quadratic equations, radicals, involution, evolution, progressions, logarithms, and imaginaries. Two hours credit.

Course 4.—COLLEGE ALGEBRA. Rapid review of elementary algebra; graphic representation; complex numbers; series, logarithms; theory of equations; Horner's method. Three hours credit. Prerequisite, course 3.

Course 5.—PLANE TRIGONOMETRY. The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two hours credit. Prerequisites, same as College Algebra.

Course 8.—INDUSTRIAL MATHEMATICS. This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks; mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers;

graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; house building; power transmissions; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit. Prerequisite, two units of high-school mathematics, one unit of physics, or an equivalent experience in mechanic arts.

Course 9.—VOCATIONAL MATHEMATICS. This course is designed especially for women, and contains samples of problems from all occupations that women are likely to enter, from the textile mill to the home. Food computations; house construction; house furnishing; dressmaking and millinery; arithmetic for office assistants, sales girls, cashiers and nurses; and a thorough drill in the metric and English systems of weights and measures. Three hours credit. This is an excellent course for teachers of arithmetic.

Course 13.—ASTRONOMY I. A general course in descriptive astronomy, dealing with the solar system and theories regarding its evolution; nebulæ; comets; meteors; measurements of the earth; determination of standard time. Two hours credit. Prerequisite, high-school algebra, geometry and physics. This course will be of great value to teachers of geography and nature study.

Physical Sciences.

J. A. YATES, Professor.
W. R. CLEVELAND, Associate Professor.

BY EXTENSION.

Course 1.—CHEMISTRY. In this course the student becomes acquainted with the different materials and elements that are used in every industry. He studies the principles involved in the transformation of the different substances with which he works. Applications of the principles of this fundamental science in all phases of work are stressed. Due emphasis is placed upon the applications of these principles to the different lines of trade or profession in which the student is engaged. Subjects included in this course are the gases, as oxygen, nitrogen, carbon dioxide, together with a description of the common metals, how they rust, protection of same; in a word, the chemical processes involved in converting raw material into finished products. Other subjects, as the study of acids, oils, paints, salts, etc., will be considered in a practical way in this course. Laboratory fee for material used.

This course may be taken where the student has access to a high-school or other chemical laboratory. Five hours credit.

Course 15.—GENERAL SCIENCE. This course is planned for grade teachers, and consists of easy demonstrations, which may be performed by the teacher to illustrate some of the scientific principles involved in the study of such subjects as air, water, fire, food, clothing, etc. Two hours credit.

Course 16.—HISTORY AND METHODS IN PHYSICAL SCIENCES. This is a course of lectures given by the different teachers in the department. These lectures consist of a nontechnical discussion of the most important discoveries in the physical sciences. The applications of these principles for efficiency is emphasized. Two hours credit.

Course 22.—HEATING AND VENTILATION. The principles of operation underlying the various modern systems of heating and ventilation installed in homes and school buildings form the basis of this course. It includes practical problems in the designing of heating and ventilating systems for buildings. Two hours cerdit.

Course 41.—GEOLOGY. This course is planned to acquaint the student with the work of the geologist and to enable him to appreciate the relations of this subject to our industrial life. Emphasis is placed upon the industrial and economic side of geology. Among the subjects considered may be mentioned the distribution and supply of fuels; the geologic processes in soil building; the raw material of many of our manufacturing industries; road building; and the making and reading of geologic maps, together with their economic value. Four hours credit.

Course 42.—GEOLOGY 2. This course begins with historical geology, and considers the lessons of history to be read in the different layers of rocks. Two hours credit.

Course 71.—HOUSEHOLD PHYSICS. A course for girls interested in home economics. It includes an inquiry into physics as applied to the problems of sewage disposal, lighting, heating, ventilating, cooking, house cleaning, laundering, etc. A careful study is made of modern labor-saving, sanitary and economical appliances for the home. Prerequisite, high-school physics or course 30. Three hours credit.

BY CORRESPONDENCE.

Correspondence work will be offered in the following courses, but no credits will be given for the correspondence work alone. The laboratory work of the course will need to be done in residence at some future date. Upon completion of both the laboratory work and the correspondence work the student will be a candidate for the hours credit listed after the subject.

Course 1.—CHEMISTRY. In this course the student becomes acquainted with the different materials and elements that are used in every industry. He studies the principles involved in the transportation of the different substances with which he works. Applications of the principles of this fundamental science in all phases of work are stressed. Due emphasis is placed upon the applications of these principles to the different lines of trade or profession in which the student is engaged. Subjects included in this course are the gases, as oxygen, nitrogen, carbon dioxide, together with a description of the common metals, how they rust, protection of same; in a word, the chemical processes involved in converting raw material into finished products. Other subjects, as the study of acids, oils, paints, salts, etc., will be considered in a practical way in this course. Laboratory fee for material used. Five hours credit.

Course 26.—GAS ENGINE ELECTRICITY. A companion course to course 25. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts. Prerequisite, high-school physics. Two hours credit.

Course 31.—MECHANICS AND HEAT. This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in building, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, high-school physics. Four hours credit.

Course 33.—ELECTRICAL MACHINERY. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, high-school physics. Four hours credit.

SATURDAY WORK.

Course 1.—GENERAL CHEMISTRY. This course consists of lectures, recitations and laboratory work upon the fundamental principles of this science, together with the application of chemistry to the various arts and industries. Among the practical subjects considered are chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils and varnishes, water, air, fuels, and the elementary principles of chemistry in food preparation and other operations in the home. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. This course is not open to students offering elementary chemistry for admission. Laboratory fee for material used. Five hours credit.

Course 2.—INORGANIC CHEMISTRY. This course is built upon a course in elementary chemistry, and consists of lectures and recitations upon the more difficult principles involved in general chemistry, including such subjects as gas laws, the solution of chemical examples, nomenclature, principles of solution, etc. The application of chemistry to the varied needs of man is emphasized. Laboratory fee for material used. Two hours credit.

Course 3.—QUALITATIVE ANALYSIS. This course consists largely of laboratory work. Emphasis is placed upon the analysis and properties of those substances that are used in the industrial arts, as oils, pigments, paints, varnishes, fuels, and alloys. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

Course 10.—FOOD CHEMISTRY. A special course for domestic science students. This course consists in the identification of food adulterants and preservatives, the effect of these upon the body, the analysis and relation of the different classes of foods, and includes a study of organic chemistry related to food. Prerequisite, Chemistry 1. Three hours credit.

Course 23.—ELECTRIC WIRING. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Two or four hours credit.

Course 31.—MECHANICS AND HEAT. This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in building, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, high-school physics. Four hours credit.

Course 33.—ELECTRICAL MACHINERY. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment, rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, high-school physics. Four hours credit.

Course 51.—ORGANIC CHEMISTRY. A general course in organic chemistry, including lectures, recitations and laboratory work. This course emphasizes the properties and uses of the organic compounds found in our industrial activities, together with the underlying chemical principles involved. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

Public Speaking and Expression.

HAROLD F. SHORY, *Professor.*

BY EXTENSION.

Course 1.—PUBLIC SPEAKING I. This course traces carefully the change from ancient to modern oratory and concerns itself principally with a study of the forms of discourse. Much practice is given the student in the preparation and delivery of his own thought before an audience. In this course freedom to think on your feet is gained in a very short time. Three hours credit.

Course 2.—PUBLIC SPEAKING II. This course shifts its attention more to the content and purpose of the speech. The general ends of speech are taken up, together with a careful study of the principles leading to the attainment of the end. These principles are made clear to the student through the preparation and delivery of his own thought before an audience. These principles are as sound and practical pedagogically as they are in the art of speech. Much attention is given to the psychology of group mind. Three hours credit.

Course 5.—INTERPRETATION. This course deals with the vocal interpretation of some of the best in literature, setting forth the principles of true interpretation. How to gain a glimpse of life as set forth in the pages of the best literature without intruding the individuality or opinions of the interpreter. Two hours credit.

Course 7.—DEBATE AND ARGUMENTATION. This course is intended to provide mainly instruction and practice in the preparation and delivery of argumentative work. While the work conveniently takes the form of debates, it is not the object of the course merely to train debaters. The course seeks rather to develop the student's power of concentration, discernment and judgment, teaching him to discriminate in the world of ideas between the chaff and the wheat. Two hours credit.

SECTION IX.—COMMERCE.

Commercial Teachers' Course.

E. F. Sholtz, Professor.
Walter S. Lyerla, Assistant.
L. C. Guffey, Assistant.

The present condition of our country has brought us face to face with the great need of more and better trained business people, and caused us to realize, as never before, the importance and dignity of this work in our present-day school system.

Every progressive high school has a department of business training. Many new departments are being installed in the junior high schools as well as the senior high schools. Therefore, the demand for commercial teachers is much greater than the supply. The salaries offered are good. Our Special Life Diploma in Commerce, given upon the completion of this course, entitles the holder to teach in senior high schools.

FRESHMAN YEAR.

Students who are high-school graduates or equivalent, upon completion of the course in Commerce, and who elect Psychology 3 hours, Methods 2 hours, Modern Education 3 hours, Practice Teaching 3 hours, and Elective 3 hours in Education, will be entitled to a Life Certificate in Commerce. Those who do not desire a Life Certificate in Commerce, see course on page 64. Students pursuing degree courses may elect 8 hours of commerce work.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Bookkeeping (1)	5	Bookkeeping and Accounting (2)	5
Algebra (3*a*)	2	Theory of Investment (10)	2
Commercial Geography (6)	3	Business Law (3)	2
Penmanship (4)	1	Penmanship (5)	1
Electives	4	Parliamentary Law (61)	2
Physical Education	1	Electives	3
		Physical Education	1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shorthand (6)	5	Dictation and Office Practice (7)	5
English (1)	4	Epic (2)	4
Commercial Methods (10)	1	Salesmanship (11)	2
Typewriting (8)	2	Typewriting (9)	2
Electives	4	Electives	3
	16		16

FIRST YEAR.

Course 1.—BOOKKEEPING. Double-entry drills. Thorough drill in application of laws of debit and credit. Handling of checks, notes, drafts, and other business vouchers. Opening and closing entries of partnership accounts. First semester. Five hours credit.

Course 2.—BOOKKEEPING AND ACCOUNTING. Consignments, corporation accounts. Manufacturing and trading accounts. Practical problems. Prerequisite, course 1. Second semester. Five hours credit.

Course 3.—BUSINESS LAW. Utility of the subject. Sources and authority of our laws. Contracts, bailments, sales, negotiable instruments, credits and loans, guaranty and surety, agency, partnership, insurance and corporations. Second semester. Two hours credit.

Course 4.—PENMANSHIP. Movement drills. Study of letter forms. Home work. First semester. One hour credit.

Course 5.—PENMANSHIP. Continuation of study of forms. Developing of rapid business hand. Home work. Second semester. One hour credit.

Course 1.—ALGEBRA.—See Mathematics.

Course 5.—COMMERCIAL GEOGRAPHY.—See Geography course.

THEORY OF INVESTMENTS (16).—See Mathematics course.

PARLIAMENTARY LAW (61).—See History course.

SECOND YEAR.

Course 6.—SHORTHAND. Complete the Gregg Manual. Special study of form and movement. Some dictation. First semester. Five hours credit.

Course 7.—DICTATION AND OFFICE PRACTICE. Special drills. Actual office practice. Care of faculty correspondence. Speed of 125, new matter. Prerequisite, course 6. Second semester. Five hours credit.

Course 8.—TYPEWRITING. Complete Ross Method. One hundred charts and finger exercises. First semester. Two hours credit.

Course 9.—TYPEWRITING. Speed drills. Copy work, 60 words per minute, perfect work. Prerequisite, course 9. Second semester. Two hours credit.

Course 10.—METHODS. This course deals with the pedagogical and professional phase of commercial work. The fundamental theory underlying the subjects of the curriculum is emphasized and shown by concrete illustrations. Special methods of instruction, problems and difficulties peculiar to the teaching of each subject, presentation of subject matter, content and arrangement of material, organization and administration, are carefully discussed. The work is conducted by means of recitations, reference readings, lectures, and written reports. First semester. One hour credit.

Course 11.—SALESMANSHIP. Applied psychology in the art of selling. Viewpoint of salesman and purchaser is studied. Study of characteristics that make a good salesman.

ENGLISH (1).—See English course.

EPIC (2).—See English course.

SHORT BUSINESS COURSE. This course is planned for those desiring to prepare for general office work. The course may be pursued as planned, or such subjects as one desires may be selected. Those wanting to prepare for teaching commerce, see Commercial Teachers' Course, outlined elsewhere.

Vocational Courses.

STENOGRAPHY AND BOOKKEEPING.

Every person, sooner or later in life, is confronted with these questions: What can I do? How can I earn a living and make the most of myself? How can I make an income sufficient to provide a few of the luxuries, as well as the necessities of life, and still have something left for old age?

One of the objects of supreme importance in every life is how to make a living. To do this in this day of competition one must be able to do some one thing, and to do that one thing extraordinarily well. The mind and energy of almost every one you meet is of necessity centered on these questions, and how to accomplish these few things. When a boy or girl finishes high school, grammar school or college these questions he meets face to face, for it then becomes necessary for him to strike out—do something—to make a living. Wise is the boy or girl who will acquire that special kind of training that will enable him to gain his start in congenial and remunerative employment, that will enable him to merit promotion and attain ultimate success, for without a proper start the arriving at a satisfactory end and the achievement of success are impossible. With these thoughts in mind we have planned two short courses of intensive training—the stenographic and bookkeeping courses.

HOW LONG DOES IT TAKE? We can understand why parents and students wish to know about how long it is going to take to complete a course. We will say, however, that the question is a pretty hard one to answer, inasmuch as so much depends on the student himself. His previous education, his industry, and the number of hours daily and at night he devotes to study must be considered. In our school every student has a certain amount of work to do and must do it regardless of the time it takes. By our individual method of instruction, no one is held back nor pushed forward and each stands on his own foundation. This is the advantage over the class method. But the work is planned so the student of average ability can complete the work in eight or nine months. Some may do it in less time.

MUST THE COURSE BE PURSUED AS PLANNED? No. One may take only such subjects as he desires. However, only the essentials are put in the course, and we recommend they be taken as planned.

POSITIONS. After completing these courses our students are capable of taking up office work at good salaries from the beginning. We do not guarantee positions for our students, but assist them. Our students have been doing this, and what others have done you can do. No well-qualified person need long look for a position. The position will seek him.

TUITION. The tuition for this work is a very small fee: $7 for incidentals, $2.50 for activity ticket, and 50 cents hospital fee per term of 18 weeks. A small rental for use of typewriter unless the student furnishes his own.

STENOGRAPHIC COURSE.

Shorthand.
Letter Writing.
Typewriting.
Penmanship.
Business English.
Spelling.

BOOKKEEPING COURSE.

Bookkeeping.
Penmanship.
Business Law.
Business Arithmetic.
Rapid Calculation.
Salesmanship.

Bookkeeping. General law of debit and credit. Use of journal, cash book, purchase book, sales book, and making of all business statements. Handling of notes, drafts and checks. Shipments and consignments. Some corporation work.

Business Arithmetic. Solving actual business problems; working time sheets; practical measurements; study of short methods.

Penmanship. Developing of a plain, legible, rapid, business hand.

Applied Business English. Careful study of business phrases. Rules for punctuation, and drills in their application.

Letter Writing. Study of letter forms; writing all classes of business letters, with enclosures; learn to do by doing; careful study of postal regulations and different classes of mail matter.

Typewriting. Writing of charts; care and repair of machines; drills for speed; working of speed to forty words per minute.

Spelling and Business Forms. Study of roots, prefixes and suffixes; spelling drills; study of checks, notes, drafts, deeds, mortgages, and writing of same.

HIGH SCHOOL COMMERCIAL COURSE.

A certificate is given for the completion of this course; also, two years' college work is given in commerce, leading to a life diploma.

FIRST YEAR.

First Semester:		*Second Semester:*	
Booking	½	Bookkeeping and Accounting	½
Business Arithmetic	½	Business Arithmetic	½
Commercial Geography	½	Business Law	½
Penmanship	¼	Penmanship	¼
Elect	¼	Advanced Grammar	½

SECOND YEAR.

First Semester:		*Second Semester:*	
Shorthand	½	Dictation and Office Practice	½
Applied Business English	½	Commercial Correspondence	½
Spelling and Business Forms	½	Typewriting	½
Typewriting	½	Elect	¼

Bookkeeping. General law of debit and credit. Use of journal, cash book, purchase book, sales book, and making of all business statements. Handling of notes, drafts, and checks. Shipments and consignments. Some corporation work. Year subject. One unit credit.

Business Arithmetic. Solving actual business problems. Working time sheets. Practical measurements. Study of short methods. Year subject. One unit credit.

Penmanship. Developing of a plain, legible, rapid, business hand. Year subject. Half unit.

Shorthand. Complete study of the manual. Text, Gregg. Twenty weeks. Half unit.

Dictation and Office Practice. Advanced shorthand. Taking of dictation from new matter. Working speed to 100 words per minute. Court testimony. Doing actual office work. Twenty weeks. Half unit.

Applied Business English. Careful study of business phrases. Rules for punctuation, and drills in their application. Twenty weeks. Half unit.

Commercial Correspondence. Study of letter forms. Writing all classes of business letters, with enclosures. Learn to do by doing. Careful study of postal regulations and different classes of mail matter. Twenty weeks. Half unit.

Typewriting. Writing of charts. Care and repair of machines. Drills for speed. Working of speed to forty words per minute. Year subject. One unit.

Spelling and Business Forms. Study of roots, prefixes and suffixes. Spelling drills. Study of checks, notes, drafts, deeds, mortgages, and writing of same. Twenty weeks. Half unit.

SECTION X.—MUSIC.

MESSIAH CHORUS.

The Faculty.

William A. Brandenburg, Ph. B., President.
Walter McCray, Director of Music.
R. Hesselberg, Professor of Violin.
Anthony Stankowitch, Professor of Piano.
Elizabeth Hallenbeck Gilbert, Professor of Voice.
Winona McLatchey, Instructor in Public-school Music and Harmony.
Esther Stewart, Instructor in Piano.
Nora Neal, Assistant Professor of Piano.
Frank Deerwester, A. D., Pd. M., Pd. D., Associate Professor in Psychology.
Bertha A. Bennett, B. S., Director of Physical Education for Women.
Ethel Mae Hill, B. S., Assistant Director of Physical Education for Women.
G .W. Weede, B. S., D. D. S., Director of Physical Education for Men.
D. M. Bowen, A. B., Professor of Education.

Music Department.

Walter McCray, Director.
Anthony Stankowitch, Piano.
Nora Neal, Piano.
Esther Stewart, Piano.
Elizabeth Hallenbeck Gilbert, Voice.
Winona McLatchey, Public-school Music.
Rhetta Hesselberg, Violin.
Mrs. Preston Reed, Violin and Organ.
Matthew Redpath, Cornet.
William Schrieb, Woodwind Instruments.

GENERAL INFORMATION.

1. All students must be enrolled before they can get their lesson assignment.

2. All lessons must be paid for in advance, or a written statement secured from the President extending time of payment.

3. Lessons missed on account of sickness will be made up, if the teacher or director of music is notified prior to the lesson period.

4. Lessons on dismissal days must be made up as arranged and announced by the department.

5. Piano, voice and violin are thirty-minute periods. Promptness is required so as not to infringe on the time of the following period.

6. The semester of eighteen weeks is divided into two music terms of nine weeks each, requiring an enrollment every nine weeks in all music subjects.

7. Department of Music of S. M. T. N. offers courses as complete as any of the leading conservatories of music. Every teacher is an artist in his special line, which gives students the advantages of a larger city.

8. Students will be admitted to this department at any time during the year, but advantages are generally better if entrance is made at beginning of semester.

9. Reasonable credit is given for all music work. Music may be an elective in any course in the institution.

10. There are several musical organizations in which talented students not in this department may take part. Among them: The Male Glee Club, the Polymnia Club, the Orchestra, the Band, and a Mixed Chorus.

11. Concerts are given during the year, and in the spring all organizations unite with musicians of surrounding communities for a week's "Spring Musical Festival."

ENTRANCE REQUIREMENTS.

For entrance to all courses leading to a degree or a diploma, the candidate for admission shall furnish proof that he is a graduate of an accredited high school in Kansas; or, if he be from another state, that he is a graduate of a high school accredited in the state from which he comes. Failing either of these, he shall furnish proof that he has completed fifteen academic units of high-school work or the equivalent.

COURSES LEADING TO A TEACHER'S CERTIFICATE.

The courses leading to a teacher's certificate in piano, organ or violin shall consist of the same subjects as for the first three years of the courses leading to a degree or a diploma, omitting the studies in the college and substituting therefor one hour per week, for two semesters, of normal training in the major subject, and one hour per week, for two semesters, of practice teaching under the supervision of the normal training instructors.

CHILDREN'S DEPARTMENT.

In addition to our regular music courses it has been decided to offer a course in piano for children. A very competent teacher will be placed in charge, under the direction of the head of the Piano Department. The tuition will be $9 for eighteen lessons. Children under twelve years admitted.

COURSES LEADING TO A DEGREE.

All candidates for a degree shall offer at least twelve hours of theory and four hours of history of music.

All candidates for a degree offering major credits in piano, organ or violin shall also offer not less than fifteen hours of college work, of which at least ten shall be in English.

All candidates for a degree offering major credits in voice shall also offer not less than twenty-five hours of college work, of which not less than ten shall be in English, and not less than ten in modern foreign languages.

Piano, voice and violin, one lesson per week for a semester, with three hours practice, leads to one semester hour's credit.

Those students majoring in music, and desiring their degree to be a life certificate to teach in the public schools of Kansas, must take the required hours in Education.

MAJOR. At least thirty hours will be required in the major in this course.

MUSICAL ORGANIZATIONS.

THE MALE GLEE CLUB. This club is chosen from the more able singers of the School. They meet twice each week.

THE POLYMNIA CLUB. This is the girls' glee club, whose organization is controlled in a like manner to the Male Glee Club.

ORCHESTRA. The orchestra is composed of students and musicians from the city, who have had years of experience. This organization gives concerts during the school year.

THE BAND. Those who have instruments and have had some experience are admitted to this organization.

THE CHORUS. The chorus is composed largely of the two glee clubs; however, it is open to all students who are able to sing and are somewhat proficient in reading music at sight. In this work, parts or the whole of the standard cantatas, oratorios, etc., are used, and the chorus very frequently appears in public during the year. The value of this practice cannot be overestimated, and it is indispensable to vocal students and school-music teachers. There is no expense connected with this work.

VOICE COURSE.

FRESHMAN YEAR. Special attention is given to correct placement of the voice; a systematic course in breathing, sustaining tones, scales and exercises; true legato; a careful analysis of vowels and consonants in relation to vocal needs, sight singing; songs for phrasing and enunciation. The voice is greatly aided by the theory courses given in the Department of Music. Technical exercises from Marchesi Practical Singing Methods, Sieber Vocalises, Panofka, Abt, which form an excellent foundation. Easy songs with simple melody are given.

Sophomore Year. A continuation of scales and exercises by Marchesi, Panofka, Concone, Sieber, suited to the needs of the pupils. Development of tone and breath control, exercises for flexibility emphasized. Songs by modern composers in English and Italian.

Junior Year. Exercises by Marchesi, Lamperti, Marzo, Bordogni for flexibility, tone color, and true legato are continued. Special attention is given to stage deportment, style and interpretation. Songs of the seventeenth and eighteenth centuries, together with modern works, are analytically studied, preferably in the original text. A junior recital given by the students for credit toward a degree may be elective.

Senior Year. Exercises for bravura, singing from Marchesi, Lamperti, and Marzo for flexibility and artistic finishing of tone. Selections from oratorio and opera songs in modern Italian and French, standard English and American works. A senior recital given by the student for credit toward a degree is required. At frequent intervals public and private recitals are given in which all capable students are required to take part, thus preparing them for the concert stage, for church and public work. Senior recitals are given by special appointment.

VIOLIN COURSE.

Candidates for diplomas must be equal to the interpretation of solo sonatas by Bach, concertos by Vieuxtemps, Mozart, Wieniawski, Spohr, Mendelssohn, and some modern compositions, as Kreisler and Saint-Saëns.

It is impossible to write out exactly the course of studies pursued in this department. Each pupil will receive those exercises and pieces which the particular case requires. Candidates for certificates must give a good performance of a piece approximating in technical and music difficulty works like concertos by Viotty and Rode, and they must have studied the etudes of Kreutzer and Dont, and the scales of Halier.

MUSIC SUPERVISOR'S COURSE.

The growing demand for thoroughly trained teachers and supervisors of public-school music has induced this School to establish this department as a special feature.

The supervisor's course not only requires a thorough knowledge of piano, voice, harmony, counterpoint, history of music, sight singing, chorus conducting, and orchestration, but each student must do practice teaching in the Model School under direction of critic teacher.

A class for benefit of grade teachers who desire a knowledge of the rudiments of music is organized each semester. Class meets daily and full credit is given.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Expression	3	History of Music (1 day)	2
Sight Singing (4 days)	2	Psychology	3
History of Music (1 day)	2	Voice	2
Voice	2	Piano	2
Piano	2	Harmony (2 days)	2
Physical Education (1)	1	Teaching 5, Lectures (1 day)	2
Teaching 5, Lecture (1 day)	2	Physical Education (2)	1
Harmony	2	Conducting	2
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs*
Voice	2	Voice	2
Piano	2	Piano	2
Harmony	2	Counterpoint	2
Electives	1	Chorus and Orchestra Conducting	2
Orchestration	2	History of Education	3
Chorus and Orchestra Conducting	2	Electives	2
Special Methods	2	Teaching	2
Management	2		
	15		15

On completion of the above course the student will be granted a special life certificate entitling him to teach in any public school, including all four-year high schools in Kansas.

RECITALS AND CONCERTS.

At frequent intervals during the school year public and private recitals and concerts are given in which all capable students are required to take part. These concerts are usually aided by the various student organizations, and are becoming very attractive features of the school year. Very frequently other concerts and entertainments by reputable artists are given in the Normal auditorium and the city, thus affording students an opportunity of hearing plenty of good music.

CLASSES AND ORGANIZATIONS FREE TO STUDENTS.

The Male Glee Club—rehearsals twice weekly.
The Polymnia Club (girls)—rehearsals twice weekly.
Orchestra—rehearsals once a week.
Band—rehearsals once a week.
Chorus practice—rehearsals as decided upon.
Public-school music, sight reading—recitations daily.

TUITION.

Term, nine weeks.

Piano, one hour lesson per week by Anthony Stankowitch	$22.50
Piano, one half-hour lesson per week by Anthony Stankowitch	13.50
Piano, one hour lesson per week by Margaret Leavitt	18.00
Piano, one half-hour lesson per week by Margaret Leavitt	9.00
Piano, one half-hour lesson, children 6 to 12 years, inclusive	4.50
Piano, two half-hour lessons, children 6 to 12 years, inclusive	9.00
Voice, one lesson per week (half hour)	9.00
Voice, two lessons per week (half hour)	18.00
Violin, one lesson per week (half hour)	9.00
Cornet and all brass and reed instruments, half-hour lessons, one per week	9.00
Harmony, class lessons	4.50
Harmony, private lessons	9.00
Piano rent, two hours daily for term, nine weeks	1.50

Those wishing to begin or to further improve their knowledge of the piano will recognize the unusual advantage in this department. Real finesse in execution and interpretation of the masters can be gained.

PIANO COURSE.

Special attention is given to laying a good foundation in the playing of each pupil. Every composition studied is analyzed, combining the theory and science of music with the technical development of the student. For the greater part of the piano curriculum the pieces are selected from the standard classical composers, although the modern school is not neglected.

The entire piano course is covered by five grades, namely:

1. Elementary. Studies and pieces selected from the first and second grades. Five pieces played from memory.

2. Primary. Studies and pieces selected from the second and third grades. Eight pieces played from memory.

3. Junior. Studies and pieces selected from the third and fourth grades. Ten pieces played from memory.

4. Intermediate. Studies and pieces selected from the fourth and fifth grades. Twelve pieces played from memory.

A certificate is given to students passing the intermediate grade, first-year history of music, and second-year harmony.

5. Senior. Studies and pieces selected from the fifth and sixth grades. Twelve pieces played from memory.

A diploma of graduation will be awarded to those who pass the senior grade, second-year history of music, and third-year harmony.

Throughout the entire piano course a definite system of technical training is carried out, using the metronome to test the student's proficiency.

Classification of a student is based on actual efficiency; not on amount of time devoted to any grade.

SECTION XI.—HIGH SCHOOL.

Junior Training High School.

(Seventh, Eighth and Ninth Grades.)

ADMISSION.

The number of students who may enroll in the Junior Training High School is limited for several reasons. The school is primarily a training school. The number of students admitted, therefore, must not be so large as to handicap the work of training teachers. Moreover, students having completed the sixth grade in the Normal Training School for the lower grades will be considered for admission first. Special students, and those who have not had, at high-school age, opportunity to attend high school, and who wish to enter the school for the first time in the ninth grade (third year of the Junior Training High School), will be accommodated as far as possible. But such students, if the major part of their work comes in the Junior Training High School, will be subject to the same requirements as to taking physical education, and as to attending chapel, as are required of other students in the same grade. Persons who have high-school advantages in their home towns are not encouraged to enter. As many students as can be accommodated, subject to the above provisions, will be admitted by presenting such credentials as will show that they have completed the work for the grade immediately preceding the grade into which they wish to enter.

GRADUATION.

For graduation from the Junior Training High School a student must have completed work totaling thirty credits, and in addition, must have done such work in physical education and music as may be required during the time and in the grades in which the student has been enrolled in the Junior Training High School.

A credit is a semester's work in one subject, consisting of a study-recitation period of one hour, five periods per week. For subjects in Science, Industrial Arts and Home Economics a credit includes such additional work (not to exceed five hours per week) as may be required for laboratory and shop work. The work of any pupil in physical education and in music will be graded according to regularity in attendance and interest shown.

SCHOOL ACTIVITIES.

Appropriate social activities, and athletics in which as nearly as possible all pupils can take part, are encouraged. Student organizations for carrying on such activities successfully are especially encouraged.

OUTLINE OF COURSE.*

FIRST YEAR.

First Semester.	*Credits.*	Second Semester.	*Credits.*
Physical Education		Physical Education	
Music		Music	
English I	1	English II	1
Mathematics I	1	General Mathematics II	1
History I	1	History II	1
Industrial Arts I	1	Industrial Arts II	1
Home Economics I	1	Home Economics II	1
Geography I	⅗	Geography II	⅗
Penmanship	⅖	Penmanship	⅖

SECOND YEAR.

First Semester.	*Credits.*	Second Semester.	*Credits.*
Required:		*Required:*	
Physical Education		Physical Education	
Music		Music	
English III	1	English IV	1
General Mathematics III	1	General Mathematics IV	1
History III	1	Community Civics	1
Industrial Arts III	1	Industrial Arts IV	1
Home Economics III	1	Home Economics IV	1
Electives:		*Electives:*	
Industrial and Commercial Geography,	1	Industrial and Commercial Geography,	1
Foreign Language	1	Foreign Language	1
Penmanship	½	Penmanship	½
Drawing	½	Drawing	½

THIRD YEAR.

First Semester.	*Credits.*	Second Semester.	*Credits.*
Required:		*Required:*	
Physical Education		Physical Education	
English V	1	English VI	1
General Mathematics V	1	General Mathematics VI	1
General Science	1	General Science	1
Electives (Elect 2):		*Electives (Elect 2):*	
Industrial Arts	1	Industrial Arts	1
Home Economics	1	Home Economics	1
Ancient History	1	Mediæval History	1
Foreign Language	1	Foreign Language	1
Agriculture	1	Agriculture	1
Bookkeeping and Accounting	½	Bookkeeping and Accounting	½
Music	½	Music	½
Drawing	½	Drawing	½

Senior High School.

PURPOSE.

The Senior High School of the State Manual Training Normal School is maintained partly as a connecting link in the training of certain types of students, partly for the preparation of those who intend to teach upon the completion of a high-school course and partly as a training school for students of Junior-Senior College grade, who are preparing to teach in the high schools of the state. The first of these classes comprise two groups: first, those who complete the course of our Junior Training High School. Second, those of more mature years who contemplate teaching, who have not had, at usual high-school age, opportunities for the completion of a high-school course. It is not the policy of the school to encourage students of usual high-school age to leave their local high school.

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* It is not claimed that this is a model course for a Junior High School. It is an attempt to meet not only the needs and conditions of a Junior High School, but those incident to a training school working under particular conditions. It must necessarily be changed as the nature and needs of a Junior High School become better known, as incident conditions change, and as it becomes evident that it fails in some respect to achieve that for which it was designed.

COURSE OF STUDY.

FIRST YEAR.

FIRST SEMESTER.

Required subjects:
- English III
- Mathematics III or Geometry I
- Biology I

Elective (one):
- English III
- Latin
- French
- Drawing
- Manual Training—Wood Turning
- Sewing—Domestic Arts III

SECOND SEMESTER.

Required subjects:
- English IV
- Mathematics IV or Geometry II
- Biology II

Elective (one):
- History IV
- Latin
- French
- Drawing
- Manual Training—Pattern Making
- Sewing—Domestic Arts IV

SECOND YEAR.

FIRST SEMESTER.

Required subjects:
- English V
- Physics I
- Physical Training

Electives (two):
- History V
- French
- Latin
- Agriculture
- Drawing
- Manual Training—Forging
- Cooking—Domestic Science I
- Arithmetic

SECOND SEMESTER.

Required subjects:
- English VI
- Physics II
- Physical Training

Electives (two):
- History VI
- French
- Latin
- Agriculture
- Drawing
- Manual Training—Foundry
- Cooking—Domestic Science II
- Algebra III

THIRD YEAR.

FIRST SEMESTER.

Required subjects:
- American History VII
- Physical Training

Electives (three):
- Chemistry
- Physiology
- Drawing
- Manual Training—Elem. Machine
- English VII
- Cooking—Domestic Science III
- Management and Methods
- French
- Latin

SECOND SEMESTER.

Required subjects:
- American History VIII
- Physical Training
- Civics IX

Electives (two):
- Chemistry
- Psychology
- Drawing
- Manual Training—Elem. Machine
- Cooking—Domestic Science IV
- Arithmetic
- French
- Latin

SUBJECTS BY GROUPS.

English, 3 units—required.

Mathematics, 2 units—required.

Algebra or General Mathematics, 1 unit.
Geometry or General Mathematics, 1 unit.

Science, 4½ units—2 units required.

Biology, 1 unit.
Physics, 1 unit.
Chemistry, 1 unit.
Physical Geography, 1 unit.
Physiology, ½ unit.
Agriculture, 1 unit.

History, 3½ units—1½ units required.

Ancient History, 1 unit.
Mediæval History, Modern History, 1 unit.
American History, 1 unit.
Civics, ½ unit.
English History, 1 unit.

Language, 6 units—none required.

Latin, 3 units.
French, 3 units.

ADMISSION.

Students may be admitted to the Senior High School in any of the following ways:

(1) By completion of the Junior High School Course in this institution.
(2) On credentials showing the completion of one year or more of acceptable work above the "eighth grade" in another school.
(3) Students of maturity holding certificates of second grade will be admitted, without examination, to the second year Senior High School Course.
(4) Students of maturity holding first-grade certificates will be admitted, without examination, to the third year Senior High School Course.
(5) Students not meeting any of the above requirements may be admitted, by examination, to such classes as their preparation warrants.

GRADUATION.

For graduation from the Senior High School, a student must have completed twelve units of work beyond the "ninth grade" or Junior High School. A "unit" is a year's work in one subject, reciting five times per week.

RUSSONIAN SOCIETY.

This society is one of the lively literary organizations of the institution. It is maintained wholly by and for the secondary students. It is not only an excellent place for literary training, but it looks well to the social life of its members.

RECEPTIONS.

During the year several social functions are held under the direction of special leaders, which are not only a source of great pleasure and delight, but the students learn the best of social etiquette. The object is to prepare the student to appear at ease in any society and to qualify him to take part in the social life of the community where he may go as a teacher.

PHYSICAL TRAINING.

The physical training of both boys and girls is under competent direction. Every student in the Senior High School is expected to take regular physical training unless excused for reason. Special work in athletics is organized and the teams engage in spirited contests with neighboring schools.

COUNTY EXAMINATION COURSES.

Special review courses will be offered for all teachers who desire to raise the grade of their county certificate. These courses will be offered during the last half of the second semester and in the summer term. They will not only prepare the student for the county examination, but will give him credit toward a state certificate.

THE ONE-YEAR STATE CERTIFICATE.

Students on graduating from the Senior High School may receive the one-year state certificate, provided that, in addition to the other required subjects, they include the following:

Civics, ½ unit.
Psychology, ½ unit.
Methods, ½ unit.
Arithmetic, ½ unit.

In addition to the foregoing requirements, courses in Music and Drawing are advised.

SECOND- AND FIRST-GRADE CERTIFICATES.

Candidates for second-grade county certificates are required to have at least three units and for first-grade county certificates at least seven units of high-school credit. These credits may be selected from the following list:

Agriculture, 1 unit.
Algebra, 1 unit.
Ancient and Mediæval History, 1 unit.
Bookkeeping, 1 unit.
Botany, 1 unit.
Civics, ½ unit.
Commercial Geography, ½ unit.
Drawing, ½ unit.
English, 2 units.
Latin, 1 unit.
Modern History, 1 unit.
Music, ½ unit.
Physical Geography, ½ unit.
Physics, 1 unit.
Plane Geometry, 1 unit.

COLLEGE ENTRANCE.

Many of our students are looking forward to a course in some college, technical school, or university. Such students should acquaint themselves with the entrance requirement of the school or type of school which they hope to enter. The standardized entrance requirements for the colleges of Kansas are the following credits above the "eighth grade"; English, 3; history, 11; algebra, 1; geometry, 1; biological science, 1; physical science, 1, and electives to complete a standard four-year course.

Biological Sciences.

HIGH SCHOOL.

The purpose of the courses in biology is to give the student that knowledge of botany, zoölogy, physiology and bacteriology which he needs in order to produce the best conditions of life for himself and for those depending on him. It is impossible to live effectively or to control the biological forces conditioning the existence not only of man, but of plants and animals as well, without a knowledge of biological laws.

The courses are designed especially with these ends in view. The laboratories are well equipped to offer the work. The equipment consists of microscopes, aquaria, biology cases, microscopic slides, and a good teaching museum.

Courses 1 and 2.—GENERAL BIOLOGY. These courses are designed to serve as an introduction to the elementary forms and forces of living nature. Here the student becomes acquainted with the common animals and plants that enter into the practical activities of the home and farm. Much of the work in the fall and spring is done out of doors. Required of first-year students in all groups. Daily for one year. One unit credit.

Course 3.—NATURE STUDY. This course aims to adapt zoölogy and botany to elementary instruction, and is designed especially for teachers in the city schools. It attempts to answer the question, "What knowledge of living forms is suitable to children between the ages of six and fifteen?" The animal and plant life of this locality is fairly abundant and varied. The agricultural plot furnishes an excellent opportunity for gardening and horticulture. Daily, spring and summer terms, twenty weeks. One-half unit credit.

Course 4.—Elementary Zoölogy. This course presents a connected study of the function and structure of animal types selected to illustrate the development of the animal kingdom. Systematic work is done with the insects and different groups of the vertebrates. One-half or one unit credit.

Course 5.—Elementary Physiology. This is a course in elementary physiology and hygiene designed especially for the elementary-school teacher. It deals mainly with the function of the organs of the human body and the hygienic conditions under which they do the best work. Attention is given to elementary-school hygiene. One-half unit credit.

Course 6.—General Science. A half-year course dealing with the biological phase of General Science for high-school students. A practical course designed to meet the needs of those students who may not get any other course in biology, and to stimulate a desire to go farther in the study of the biological problems of life. One-half unit credit.

Commercial Course.

A certificate is given for the completion of this course; also, two years' college work is given in commerce, leading to a life diploma.

FIRST YEAR.

First Semester:		*Second Semester:*	
Booking	½	Bookkeeping and Accounting	½
Business Arithmetic	½	Business Arithmetic	½
Commercial Geography	½	Business Law	½
Penmanship	¼	Penmanship	¼
Elect	¼	Advanced Grammar	½

SECOND YEAR.

First Semester:		*Second Semester:*	
Shorthand	½	Dictation and Office Practice	½
Applied Business English	½	Commercial Correspondence	½
Spelling and Business Forms	½	Typewriting	½
Typewriting	½	Elect	¼

Bookkeeping. General law of debit and credit. Use of journal, cash book, purchase book, sales book, and making of all business statements. Handling of notes, drafts, and checks. Shipments and consignments. Some corporation work. Year subject. One unit credit.

Business Arithmetic. Solving actual business problems. Working time sheets. Practical measurements. Study of short methods. Year subject. One unit credit.

Penmanship Developing of a plain, legible, rapid, business hand. Year subject. Half unit.

Shorthand. Complete study of the manual. Text, Gregg. Twenty weeks. Half unit.

Dictation and Office Practice Advanced shorthand. Taking of dictation from new matter. Working speed to 100 words per minute. Court testimony. Doing actual office work. Twenty weeks. Half unit.

Applied Business English. Careful study of business phrases. Rules for punctuation, and drills in their application. Twenty weeks. Half unit.

Commercial Correspondence Study of letter forms. Writing all classes of business letters, with enclosures. Learn to do by doing. Careful study of postal regulations and different classes of mail matter. Twenty weeks. Half unit.

TYPEWRITING. Writing of charts. Care and repair of machines. Drills for speed. Working of speed to forty words per minute. Year subject. One unit.

SPELLING AND BUSINESS FORMS. Study of roots, prefixes and suffixes. Spelling drills. Study of checks, notes, drafts, deeds, mortgages, and writing of same. Twenty weeks. Half unit.

Drawing.

JUNIOR HIGH SCHOOL.

The drawing courses in the Junior High School are planned to meet the needs of the Departments of Industrial Arts and Household Economy. The drawing instructions are adapted to meet the needs of the pupil in his special work. Certain common fundamentals are emphasized throughout the course to give unity to the progress while acquiring technic and skill. The methods used will give special attention to securing definite results which will be of practical service, and not to doing abstract exercises in drawing. The work of boys will be fitted to meet the demands of the shop work, and that of the girls to acquire fundamentals of home decoration and costume design.

SENIOR HIGH SCHOOL.

The drawing courses in the Senior High School are to meet the needs of pupils who are preparing themselves for higher education or for definite professions in practical life. The acquirement of skill and technic will be emphasized, with development of taste and appreciation. The work of the boys will cover the field of practical mechanical drawing, developing into architectural and home planning, or into machine drawing. The work of the girls will be developed among lines leading toward a most thorough understanding of the principles underlying home decoration and costume design as well as in art application.

Course 1.—FREE-HAND DRAWING FOR BOYS. A course for the development of technique and the elementary principles of working drawings, lettering and shop sketching.

Course 2.—FREE-HAND DRAWING FOR GIRLS. Pictorial and decorative drawing in outline and in color. Still-life, groups and objects are used to develop an understanding of perspective history of art.

Course 3.—DESIGN FOR BOYS. Principles of design, spacing and proportion applied to the construction of objects suitable for shop use.

Course 4.—DESIGN FOR GIRLS. Principles of design, lines of grace and beauty, spacing and proportions. Units, borders, conventionalization of natural forms adapted for use in the sewing department. Study of ornament.

Course 5.—PENCIL, CHARCOAL, PEN AND INK AND COLOR OUTLINE, AND LIGHT AND SHADE DRAWING. Perspective principles with shades and shadows. History of Egyptian and Greek architecture.

Course 6.—APPLIED DESIGN. Application of the principles of design to actual problems to be constructed in the shop or sewing department.

Course 7.—ELEMENTARY MECHANICAL DRAWING. The student will attain proficiency in the use of instruments. A knowledge of orthographic projections, sections, developments, working drawings, etc., as applied to practical work, is given.

Course 8.—ADVANCED MECHANICAL DRAWING. A continuation of course 7 in which standard drawing-room conventions are studied and applied in the drawing of machine parts. Lettering, tracing, and blueprinting.

Course 9.—MACHINE DRAWING. This course is designed to round out the work in mechanical drawing as it relates to the metal trades. The use of conventions, standards and simple rules of empirical design are used in the designing of problems for construction in the shop.

Course 10.—ARCHITECTURAL DRAWING. Study of the classic orders of architecture, architectural design, plans and elevations of a simple cottage. Reading and lectures. Arrangement of rooms for convenience. Houses under process of construction are observed, and the work of the classroom developed from notes and sketches.

Domestic Art.

Course 1.—FIRST YEAR, FIRST TERM. (1) Review of principles learned in elementary school, and their application upon a problem in simple handwork, such as a fancy apron, a bag, etc. (2) Care and use of sewing machine. Simple machine problems; a kimono, komono nightgown, bungalow apron, etc. (3) Begin study of textile fibers and their manufacture, with the emphasis placed upon economical purchasing. (4) Simple embroidery stitches applied upon Christmas work. (5) Lessons upon personal hygiene. (Free-hand drafting of patterns for apron, kimono, nightgown.) Fee for material used. One-half unit credit.

Course 2.—FIRST YEAR, SECOND TERM. (1) Continuation of textile study. (2) Use and alteration of commercial patterns. (3) Making a smock and plain wash skirt. (4) Fancy stitches applied to collar and cuffs, table runner, sofa pillow, or pillow slips. (5) Daintiness and simplicity emphasized in the making of underwear. Problem: Teddy bear. (6) Lessons covering hygiene of clothing, removal of spots, care and repair of clothing, selection of wardrobe suitable for a high-school girl. Fee for material used. One-half unit credit.

Course 3.—SECOND YEAR, FIRST TERM. (1) Care and use of sewing machine reviewed. (2) Making of cooking cap and apron (free-hand drafting). (3) Study of textiles: manufacture, simple tests, problems in suitability of fabric to purpose, color to individual, etc., economic buying, care of clothing. (4) Use and alteration of commercial patterns. (5) Making of worsted dress. Fee for materials used. One-half unit credit.

Course 4.—SECOND YEAR, SECOND TERM. (1) Use of attachments of machine. (2) Finishes and trimmings for wash dress. (3) Making of wash dress, pattern drafting, practice in fitting. (4) Hat making and trimming, renovation of millinery materials. (5) Lessons in costume design, selection and care of clothing and household textiles, hygiene of clothing, personal hygiene. Fee for material used. One-half unit credit.

Domestic Science.

Course 1.—THIRD YEAR, FIRST TERM. Study of laboratory equipment. Care of range, refrigerator, sinks, utensils, study of fuels. Classification of foods, source, composition, effect of heat, digestibility. Preparation of beverages, fruits, starchy foods, vegetables, making of sauces; sugar cookery. Making of milk, egg and cheese dishes. Fee for material used. One-half unit credit.

Course 2.—THIRD YEAR, SECOND TERM. Continuation of course 1. Study of cuts of meat. Preparation of meat, fish, and gelatine dishes. Study of meat substitutes. Study of flour and various leavening agents.

Doughs and batters. Preparation of popovers, griddle cakes, waffles, muffins, cookies, cakes, pastry and bread, salads and frozen desserts. Fee for material used. One-half unit credit.

Course 3.—Fourth Year, First Term. Personal sanitation; household sanitation: location of house, ventilation, plumbing, disposal of waste. Household management: Care of the house, marketing, division of income, keeping accounts. Care and feeding of infants and young children. Fee for material used. One-half unit credit.

Course 4.—Fourth Year, Second Term. Invalid cookery. Study of relation of diet to disease. Preparation of trays for invalids. Elementary dietetics. Study of food values. Serving of meals. Preserving and canning fruits. Fee for material used. One-half unit credit.

EDUCATION.

Elementary Psychology I. This course is primarily for high-school students intending to teach. The student is introduced to the subject from a functional standpoint, emphasis being laid on what the mind does rather than what it is. One-half unit credit.

Methods II. This course is intended for students completing the secondary course, who plan to teach before entering college. It anticipates the problems of method and management the beginning teacher meets in the rural and village school. One-half unit credit.

Observation of Teaching.—The Training School will be open to prospective teachers for the purpose of observation. If conditions permit, one-half unit credit may be secured.

French.

JUNIOR HIGH SCHOOL.

Conversational French.—*Second Year.* First semester: Conversation on the everyday surroundings of the pupils; songs, games, memorizing of selected portions of prose and verse. Second semester: Conversation continued, with easy readings. Fables, poems, songs, short stories.

Elementary.—*Third Year.* Pupils who have had Conversational French will take French I, first semester; French II, second semester. Others will postpone French I and II until the first year, Senior High School.

SENIOR HIGH SCHOOL.

Course 1.—Elementary. First semester. Fraser and Squair's Shorter French Course, Lessons I to XXVI. Snow and Lebon's Easy French. Careful study of pronunciation. Conversation and dictation, with translation into English of difficult phrases only.

Course 2. Second Semester. Shorter French Course, Lessons XXVII to LII. Easy French completed. Memorizing of songs and poems.

Course 3.—Intermediate. First semester. Shorter French course, Lessons LIII to LXXX. Review of elements. Dictation, memorizing, much oral and written work. Reading of about 100 pages selected from Bruno, Verne, Daudet, Mérimée.

Course 4. Second Semester. Shorter French Course, completed. Composition, François or Levi. Reading, some intensive, some rapid—about 150 pages from LeSage, Sandeau, Labiche, and others.

Course 5. First Semester. Advanced composition and letter writing. Reading of about 200 pages from more difficult authors. Dictation, memorizing, résumés.

Course 6. Second Semester. Readings from Loti, Coppée, George Sand, Chateaubriand, etc. Methods of course 5 continued.

English.

HIGH SCHOOL.

Course 1.—GRAMMAR. A course in which English grammar is made practical and profitable—a reasoning, not a memory subject—and presented as the structural foundation of language. One-half unit credit.

Course 2.—COMPOSITION. Both oral and written. A study of sentence structure, punctuation and spontaneity of expression. Correlated with and based upon current events. One-half unit credit.

Course 3.—COMPOSITION AND RHETORIC. Description, narration, and themes. One-half unit credit.

Course 4.—COMPOSITION AND RHETORIC. Exposition, argumentation, poetic forms. One-half unit credit.

Course 5.—AMERICAN LITERATURE. A study of the different schools of writers and the representative authors of each, with representative classics. One-half unit credit.

Course 6.—AMERICAN LITERATURE. This is a continuation of course 5, with a more intensive study of American classics, correlated with some phase of composition work, such as paragraphing or the making of logical outlines. One-half unit.

Course 7.—MYTHOLOGY AND ENGLISH LITERATURE. Guerber's "Myths," correlated with Milton's "Minor Poems" and other illustrative classics.

Geography.

SENIOR HIGH SCHOOL.

Courses 1 and 2.—PHYSICAL GEOGRAPHY. This course is designed to open the doors of science to the secondary pupil; to introduce topography, climate and soil as economic controls; to bring the student into harmony with his geographic environment. One unit credit.

Course 3.—GEOGRAPHY REVIEW. This course is designed for high-school and college students who desire a general review of subject matter of political geography, together with methods of presentation. One-half unit credit.

Course 4.—COMMERCIAL GEOGRAPHY. This course is designed to give the high-school student a knowledge of the geographic basis of commerce. It consists of text work, library reading, and the working out of geographic commercial problems. One-half unit credit.

History and Social Sciences.

JUNIOR HIGH SCHOOL

Course 1.—ANCIENT HISTORY. This covers an introductory study of the ancient nations of Egypt, Babylonia, Chaldea, Assyria, Phœnicia, the Hebrews, India and China. The major part of the course is given to

Greece and her institutions. Offered five hours per week, the first semester of the second year, Normal High School course, and is essential to History of Education. One-half unit credit.

Course 2.—ANCIENT HISTORY. This course is given to the study of Rome through her rise and fall, and also the transitional period from 476 A. D. to the death of Charlemagne, 814. Offered five hours per week, second semester, second year, Normal High School course. This is essential to History of Education. The work in courses 1 and 2 is done from outline. Special reference for library work, with map drawing, special papers, and special illustrated lectures by the teacher. Daily. One-half unit credit.

SENIOR HIGH SCHOOL.

Course 3.—MEDIÆVAL HISTORY. This course covers the period from the death of Charlemagne to the close of the fifteenth century. In this course special attention is given to the rise of nations after the fall of Rome and the struggle for supremacy between the church and state. Offered first semester, third year, Normal High School course. Daily. One-half unit credit.

Course 4.—MODERN HISTORY. This course takes up the Renaissance, Reformation, Revolutions, social life of the times, rise and growth of constitutional governments, with the fall of absolutism. Offered the second semester of the third year, Normal High School course. Daily. One-half unit credit.

Course 5.—ENGLISH HISTORY. A short course based upon Cheyney's text, to aid pupils in understanding the basis of many of our modern institutions which are otherwise not clear in the student's thinking. One-half unit credit.

Course 6.—ELEMENTARY ECONOMICS. In this course attention is given to the fundamental principles of economics, with special work assigned to students suited to that course, such as rural economics, home economics, and social problems of city and farm. In our age of political, social and economic problems this course is indispensable, and lays well the foundation for further study in economics and society. Offered the second semester, fourth year. One-half unit credit.

Course 7.—AMERICAN HISTORY. This course covers the first half of American history beginning with 1492, and runs through the first semester of the senior year of Senior High School. It is a part of the history requirements for the one-year state certificate. One-half unit credit.

Course 8.—AMERICAN HISTORY. Is a continuation of course 7, covering the last half of American history and is offered during the second semester of the senior year of Senior High School, making the complete American history requirements for the one-year state certificate. During the last six weeks of this semester special emphasis will be given to Kansas history. One-half unit credit.

Course 9.—CIVICS. This course is to give the student a thorough understanding of the principles and practical workings of our government and prepare for intelligent citizenship. One-half unit credit.

Manual and Industrial Arts.

WOOD WORK.

Course 1.—BENCH WORK. Includes a study of tools—as uses, names of parts, adjustments, their care, and how to sharpen; the making of a few important joints used in wood construction and their application in making useful projects; a study of materials, fastenings, etc.; notebook work, covering the talks, demonstrations, problems sketches. Five double periods per week for twenty weeks. One-half unit credit.

Course 3.—JOINERY. This course includes a study of tools, as uses, names of parts, adjustments, care of, and how to sharpen; the making of important joints and their application in the making of useful projects; a study of the different woods and materials used; demonstrations, and notebook work. Five double periods per week for twenty weeks. One-half unit credit.

Course 5.—WOOD TURNING. Includes the care and use of turning tools, care and adjustments of lathe, turning between centers, chuck, faceplate and screw-center work, polishing in the lathe. Exercise work, followed by applications in some useful project. Five double periods per week for twenty weeks. One-half unit credit.

Course 7.—PATTERN MAKING AND MOLDING. Includes instruction in the use and care of tools and machinery; instruction in allowances for draft, shrinkage, finish, shake and warp; a study of all the interests involved in the foundry of each pattern; and the making of patterns involving the fundamental principles of the trade. Five double periods per week for twenty weeks. One-half unit credit.

Course 9.—CABINETMAKING. Includes the use of general woodworking tools and machines; designing and construction of furniture and cases for home and school use; a study of woods; and a carefully prepared notebook on the work done, covering fastening devices, materials, demonstrations, etc. Five double periods per week for twenty weeks. One-half unit credit.

Course 11.—BUILDING CONSTRUCTION Designed to teach the fundamentals of building construction applied to the making of useful projects about the home. The work is largely individual, and encouragement is given to secure the greatest possible variety of projects. Five double periods per week for twenty weeks. One-half unit credit.

METAL WORK.

Course 2.—FOUNDRY. A course in which the simpler problems of foundry practice are studied, including green dry sand and cored work, the use of the brass furnace and cupola. Five double periods for twenty weeks. One-half unit credit.

Course 4.—FORGING. A course in which the theoretical as well as the practical side of forging is studied in connection with the simpler farm and industrial problems. Five double periods for twenty weeks. One-half unit credit.

Course 6.—MACHINE-SHOP PRACTICE. Elementary work in chipping, filing, fitting, and practical experience in operating the more common machine tools. Five double periods for twenty weeks. One-half unit credit.

Course 7.—MACHINE SHOP. A continuation of course 6.

Mathematics.

Course 1.—GENERAL MATHEMATICS V. An introductory course in the simpler principles of both algebra and geometry, together with those topics in arithmetic which should be worked by the methods and concepts of algebra and geometry. First semester, third year of the Junior High School. One-half unit credit.

Course 2.—GENERAL MATHEMATICS VI. A continuation and completion of the topics outlined in course 1. Second semester, third year of Junior High School. One-half unit credit.

Course 3.—GENERAL MATHEMATICS VII. A continuation of the unified mathematics outlined in courses 1 and 2, including all the algebra and geometry usually given in the first two years' work of the standard four-year high school. First semester, first year of the Senior High School. One-half unit credit.

Course 4.—GENERAL MATHEMATICS VIII. A completion of topics 3 and an elementary treatment of logarithms. Many applied problems are given in this course. Second semester, first year of the Senior High School. One-half unit credit.

Course 5.—ARITHMETIC A rapid review of the essential topics of practical value, with emphasis on the short methods in common use. Considerable stress is placed upon the degree of accuracy required in the problems assigned, and only such problems are considered as have close similarity with those met in the commercial or industrial occupations. This course is designed for the special benefit of the rural and grade teachers. First semester, second year. Prerequisite, two years of high-school mathematics. One-half unit credit.

Course 6.—ALGEBRA III. This course completes the work in algebra usually given in high schools. It includes a review of linear and quadratic equations, radicals, involution, evolution, progressions, logarithms and imaginaries. Second semester. Prerequisites, courses 1 to 4, or their equivalent. One-half unit credit.

Course 7.—SOLID GEOMETRY. Elements of solid geometry; properties and measurements of surfaces and solids. Prerequisite, Plane Geometry. One-half unit credit.

Course 8.—INDUSTRIAL MATHEMATICS I. A course in elementary mechanics as applied to agricultural and shop machinery. Carpentry and building; sheet-metal work; bolts, screws and rivets; shafts, pulleys and gears; plumbing and hydraulics; steam engines; mathematics for machinists. First semester. Prerequisite, at least one year of high-school mathematics. One-half unit credit.

Course 9.—INDUSTRIAL MATHEMATICS II. A continuation of course VII. Second semester. Prerequisite, course 7. One-half unit credit.

Course 10.—VOCATIONAL MATHEMATICS I. This course is designed especially for girls, and deals with the computations found in all the principal vocations that women are likely to enter. Food computations; house construction and furnishing; dressmaking and millinery; arithmetic for office assistants, salesgirls, cashiers, and nurses; and a thorough drill in the metric and English systems of weights and measures. Prerequisite, at least one year of high-school mathematics. First semester. One-half unit credit.

Course 11.—VOCATIONAL MATHEMATICS II. A completion of the topics outlined in course 9. Second semester. One-half unit credit.

Methodology.

Course 1.—METHODS FOR SENIORS IN HIGH SCHOOL. The high-school course provides for a half unit in methods and management, and in meeting this requirement in the professional course a class in methods is maintained the last semester for those who are planning to teach directly following their graduation from high school. This course includes methods in the various studies taught in the elementary schools. Special consideration is given to difficult portions found in the state texts in the common branches. One-half unit credit.

Physical Sciences.

INDUSTRIAL PHYSICS.

Course 1.—MECHANICS AND HEAT. An elementary course, consisting of classroom demonstrations, recitations, laboratory work and field trips to develop and apply the principles of mechanics and heat. Emphasis is placed largely upon the industrial applications of these principals to familiar machines and instruments, such as steam and gas engines, pumps, hydraulic presses, pressure gauges, water and gas meters, speed indicators, pulleys, blocks and tackles, and chain hoists. First semester. Three class periods and two double laboratory periods per week. One-half unit credit.

Course 2.—ELECTRICITY, MAGNETISM, SOUND AND LIGHT. An elementary course of demonstrations, recitations and laboratory work in practical electricity, sound and light. The boys study the construction and operation of such electrical devices and machines as dynamos, motors, transformers, arc lights, meters, electric irons, toasters, stereopticon machines, telephones, telegraph, wireless systems. Second semester. Three class periods and two double laboratory periods per week. One-half unit credit.

HOUSEHOLD PHYSICS.

Course 1.—HEAT AND MECHANICS. An elementary course in the principles of heat and home mechanics, consisting of recitations, demonstrations and laboratory work. Problems studied are heating of homes, efficient use of fuels, proper methods of ventilation, moisture in air, gas and water meters, sewing machines, vacuum cleaners, sanitary plumbing, water supply, etc. Three class periods and two double laboratory periods per week. One-half unit credit.

Course 2.—LIGHT, SOUND AND ELECTRICITY. Continuation of course 1. Some of the subjects studied are principles of good lighting, measurement of light values, musical instruments, principles of harmony, electric door bells, electric meters; operation and cost of operating electric irons, lights, toasters and fans, etc. Three class periods and two double laboratory periods per week. One-half unit credit.

INDUSTRIAL CHEMISTRY.

Course 1.—This course consists of the study of such subjects as air, water, fuel, and cleaning agents, together with the easier tests for the classes of plant and animal foods. Emphasis is placed upon a clear understanding of the chemistry of the home and farm, as this course is designed for students of the domestic art, science and agriculture courses. Laboratory fee for material used. One-half unit credit.

Course 2.—INDUSTRIAL CHEMISTRY. A continuation of course 1. One-half unit credit.

Course 3.—General Science. This course, as the name implies, includes the easy parts of the physical sciences. The course aims to acquaint the student with his physical environment, also a basis for more extensive work in any of the physical sciences. One-half unit credit.

Physical Education.

JUNIOR AND SENIOR HIGH-SCHOOL BOYS.

The courses in physical education are required in all the years of both the Junior and Senior High Schools. Students who report regularly for the athletic teams will be given credit on their required work.

Courses 1 and 2.—Junior High School. First and second semester. Two hours weekly. This course will, whenever the weather permits, be conducted outdoors and during the winter months in the college gymnasium. Many outdoor playground games will be used and the indoor work will consist of free exercises, graded apparatus work and gymnastic games.

Courses 3 and 4.—Senior High School. First and second semester. Three hours weekly. This course is a continuation of the Junior High School courses 1 and 2, and the students will be advanced as proficiency in the graded course is shown. Senior High School students have equal consideration with the college students in the use of the gymnasium and athletic field.

SECTION XII.

Degrees Conferred, Certificates Granted, and Roll of Students.

Student Roll.

POSTGRADUATES.

Bennett, Ernest; Pittsburg.
Cass, Mrs. Edith L.; Moran.
Cass, George T.; Moran.
Catlett, Merton L.; Columbus.
Covell, Effie M.; Pittsburg.
Davidson, Ross W.; West Mineral.
Drake, Louise; Pittsburg.
Hall, Harry H.; *Joplin, Mo.*
Halsey, Katherine Amelia; Coffeyville.
Hancock, Anna Leora; Coffeyville.
Hatton, Ethel Marie; Pittsburg.
Hughes, Anna Elizabeth; Fort Scott.
Lacey, Amelia Evelyn; Pittsburg.
Lyerla, Walter Samuel; Pittsburg.
McAdoo, Ruby Edna; Pittsburg.
McMurray, Clare Dewitt; *Rutledge, Mo.*
Matthews, Charles Walton; Columbus.
Nickell, William Anderson; *Joplin, Mo.*
Pickens, Verne Lyle; *Maryville, Mo.*
Ringle, Mrs. Lillian Newton; Pittsburg.
Romig, Ida V.; Coffeyville.
Sinclair, Benjamin Franklin; Greeley.
Skourup, Elnora Catherine; Pittsburg.
Smith. Glen D.; Pittsburg.
Stephens, Sara; Pittsburg.
Stewart, Mary; Pittsburg.
Townsend, Jane; Girard.
Twente, Mrs. Petrea; Galena.
Van Dyke, Mrs. Bessie A.; Pittsburg.
Weaver, Floyd J.; Burr Oak.
Young, Hattie Emmeline; Galena.

COLLEGE SENIORS.

Ball, Eva Daly; Independence.
Benefiel. James H.; Coffeyville.
Bold, Blanche; Newton.
Born. Marshall Earl; Holton.
Bowlus. Harry John; Mulberry.
Brakey, Maude Marie; Neodesha.
Bresee, Nadine; Pittsburg.
Brock, David Collins; Altamont.
Brown, Nina Elizabeth; Pittsburg.
Butler, James Clay; Chetopa.
Carroll, Jane M.; Wichita.
Carey, Eugenia May; Pittsburg.
Clark, Roe E.; Arcadia.
Cook. Carrie R.; Parker.
Crowell. Mrs. J. C.; Johnson.
Cunningham, Eva; Strong City.
Dale, Olivia Lanyon; *Carthage, Mo.*
Davis. Harold P.; Pittsburg.
Doles, Iva Edith; Haven.
Downing. Ethel; Galena.
Ennis. Marion; Pittsburg.
Ferguson. Nita; Independence.
Ferpotto, J. A.; Frontenac.
Flottman. Edward Albert; Chanute.
Forsyth, Joseph Bryn; Pittsburg.
Focht, Ralph William; Emporia.
Fox, Arthur Berl; Parsons.
Frey, Marie; *Corsicana, Tex.*
Fulkerson, Eula Lorene; Pittsburg.
Fulkerson, Freddie Lidia; Pittsburg.
Gardner, Norma Leona; Elsmore.
Gear, Benjamin H.; Sherman.
Goffe, Raye Eleanor; Pittsburg.
Goodwin, Perva Margaret; Pittsburg.
Gould, Mary Ellen; *Chillicothe, Mo.*
Guthridge, Lemuel A.; Independence.
Hackney, Effie Belle; Hallowell.
Hankins, Russell Eugene; Burden.
Harris. Mrs. Louvina Dockery; Galena.
Hegele, Margaret; Iola.
Hesant. Hazel Belle; Chetopa.
Hill, Catherine; Hutchinson.
Hill, Mary Belle; Nickerson.
Holman, Flo E.; Mulberry.
Hopper. Bess; Lansing.
Householder, Hattie Campbell; *Pineville, Mo.*
Householder, Stanford Linden; *Pineville, Mo.*
Hudson, Helen Adele; Fort Scott.
Huff, Neal Erwin; Fort Scott.
Huston, Vera L.; Pittsburg.
Iliff, Ethel Marie; Cherokee.
Jarrell, Elsie I.; Pittsburg.
Jay, Mrs. Gay M.; Coffeyville.
Jones, Willie Belle; Parsons.
Jones, Zell Marjean; Yates Center.
Keeler, Mary Pearl; Treece.
Litton, Glenn B.; Pittsburg.
Locke, Ova Lee; Cherryvale.
McBee, Grace Emma; Pittsburg.
McColey, Fred Madison; Westphalia.
McDonald, Edna R.; *Sherman, Tex.*
McFarland, Muriel Graham; *Liberal, Mo.*
McGinnis, Harry; McCune.
Malleis, Edward Herman; Halstead.
Masters, George E.; *Carl Junction, Mo.*
Mathes, Lloyd Merrill; *Stigler, Okla.*
Matthews, William H.; Pittsburg.
Mertz, Sister Mary Ursula; Paola.
Miller, Charles Marvin; Altamont.
Miller, Lena Marie; Chanute.
Moherman, Helen; Wellsville.
Monahan, Mary Margaret; Frontenac.
Moody, Charles LeRoy; Columbus.
Moore, Florence Edwina; Pittsburg.
Myers, Clara G.; Weir.
Nation, Marion A.; Pittsburg.
Needham, Russell Philetus; Arcadia.
Nichols, Mary Edna; Pittsburg.
Oberg, Ethel Louise; Mulberry.
O'Dell, Claude Wilson; *Kansas City, Mo.*
Oliver, Anna; Pittsburg.
Oliver, Salina; Pittsburg.
Pierce, Ethlyn Winifred; Redfield.
Piper, Robert Harold; Scammon.
Porter, Mrs. Caroline W.; Parsons.
Potter, Emma Grace; Girard.
Powell, Murat Halstead; Pittsburg.
Pratt, Gabriella May; Fort Scott.
Price, Grace Catherine; Coffeyville.
Priestley, Clara Odella; Pleasanton.
Pritchard, Laura Ida; Wichita.
Rambo, William Leslie; Mulberry.
Ransom, Donald Earl; Pittsburg.
Reeves, Homer L.; Winfield.
Reichart, Mother Thomas; Paola.
Rencenberger, W. M.; Pittsburg.

COLLEGE SENIORS—*Concluded*.

Roberts, Irene Sinclair; Baxter Springs.
Robinson, Charles S.; Girard.
Rogers, Alza; *Gentry, Ark.*
Rose, Marion M.; Fort Scott.
Rushing, Mrs. Mary Woodson; Hutchinson.
Schwab, Bessie Alice; Cherokee.
Scott, Wilma; Pittsburg.
Sergeant, Martha Gertrude; *Joplin, Mo.*
Sholtz, Edward F.; Pittsburg.
Shumard, Velma Dean; Colony.
Smiley, Fannie May; Pittsburg.
Smith, Helen Jane; Pittsburg.
Smith, Lowell Everett; Independence.
Smither, Reba E.; Pittsburg.
Snyder, Salatheal Schuyler; *Joplin, Mo.*
Spencer, Bertha; *Carthage, Mo.*
Staib, James Rutherford; Elk City.
Stamm, Gertrude Alene; Pittsburg.
Stoffer, Frank Myron; Fort Scott.
Stonecipher, Ernest Everett; Galena.
Stonerock, Mrs. Mabel Janes; Pittsburg.
Summers, Ruth Prudence; Pittsburg.
Swayze, Paul Daniel; *Kansas City, Mo.*
Thompson, Hazel Emma; Parsons.
Tomlinson, John R.; Independence.
Towel, John Foster; Elsmore.
Trinder, Martha Anne; Parsons.
Tuerk, Mrs. Mollie C.; *Joplin, Mo.*
Van Norsdall, Weir W.; Arma.
Waddle, Mabel Viola; Osage City.
Walter, Mary Luella; Altamont.
Watson, George Ezra; Fort Scott.
Wells, James Ralph; Cedar Vale.
West, James Thomas; *Tulsa, Okla.*
Willard, Mabel Grace; Arcadia.
Wingart, Frances Mae; Topeka.
Worden, Arthur Milton; Wellington.
Yates, Charles Robert; Pittsburg.
Young, Minnie Ethel; Galena.
Ziegler, Tobias F.; Pleasanton.

COLLEGE JUNIORS.

Alexander, Gladys Nellie; Pittsburg.
Allen, Lora Alice; Pittsburg.
Allen, Rose; Fort Scott.
Armstead, Marguerite Leona; Fort Scott.
Ash, Ursula; Pittsburg.
Baker, Barney McKinley; *Picher, Okla.*
Baker, Bessie M.; Oswego.
Baker, Mrs. Florence; Galena.
Baker, Mary Elizabeth; Oswego.
Barber, Gertrude Louise; Coffeyville.
Bayne, Rhoda; St. Paul.
Betts, Maybelle; Columbus.
Blaes, Sister M. Florence; Parsons.
Board, Dollie; *Joplin, Mo.*
Bohannon, Alvan A.; Dillon.
Bowen, Dorothy; Pittsburg.
Brackkeen, Don Lee; Caldwell.
Bradley, Opaline Laoma; Parsons.
Brandenburg, Merrill Francis; Pittsburg.
Broyles, Magretta; Pittsburg.
Bruno, Fannie Mae; West Mineral.
Bruno, Mary Helen; Parsons.
Bryan, Zephr Mae; Galena.
Burnett, Mabel; Parsons.
Bushnell, Hilda Corinne; Mound Valley.
Caffey, Floy Bea; Pittsburg.
Carl, Hazel B.; Fort Scott.
Carney, Dora; *Joplin, Mo.*
Carney, Georgia O.; Galena.
Carney, Winnie; *Joplin, Mo.*
Cherblanc, Marguerite; Frontenac.
Christmore, Esther Claire; Edna.
Clark, Oma D.; Fort Scott.
Cline, Mrs. Rebecca E.; McPherson.
Corlett, Eva; *Joplin, Mo.*
Corning, Dorothy Edith; Girard.
Costigan, Catherine J.; Ottawa.
Coverston, Helen Louise; Pittsburg.
Davidson, Clyde O.; Columbus.
Davis, Thomas Ezra; Bartlett.
Dawson, Anna Belle; *Lamar, Mo.*
Dean, Frances L.; Parsons.
DeArmond, James R.; Kanopolis.
Dodson, Clara May; Baxter Springs.
Doty, Francis Amelia; Sedgwick.
Easley, Anna Bert; Elk City.
Elliott, Mrs. Marie Jesson; Coffeyville.
Esch, Eugenia Rosalie; Pittsburg.
Esch, Marie Anna; Pittsburg.
Farrimond, Mildred; Pittsburg.
Ferguson, Kate; Parsons.
Fesmire, John Russell; Rose Hill.
Finley, Ruth L.; Fort Scott.
Fintel, Anna C.; Pittsburg.
Flagg, Ethelyn L.; Pittsburg.
Flagler, Lena L.; *Joplin, Mo.*
Frankenfield, Olive May; Pittsburg.
Galpine, Joseph Henry; *Asbury, Mo.*
Garrison, John B.; Alden.
Gaw, Hannah Lee; Girard.
Gaw, Helen; Girard.
Gibson, Mrs. Olive Nelson; *Webb City, Mo.*
Gold, Ernest James; *Meriden, Iowa.*
Goodrum, Cecile; Pittsburg.
Graham, Alpha; *Vinita, Okla.*
Gregg, Ruth Marie; Pittsburg.
Guntle, Grace Mildred; Oswego.
Guntle, Mable Gertrude; Oswego.
Haggard, Alta L.; Oswego.
Hartley, Lloyd M.; *Maryville, Mo.*
Hawkins, Ernest Jocquito; Fort Scott.
Haworth, Inez; *Joplin, Mo.*
Hayman, Abbie Ruth; *Van Buren, Ark.*
Heck, Agnes; Princeton.
Helphrey, Lorena Helen; Wichita.
Hewit, Hildegarde; Parsons.
Heyburn, Pearl; Monett.
Highbaugh, Swan L.; Coffeyville.
Hill, Carey Lewis; Ottawa.
Hobbs, Alpha Herrick; Weir.
Hoerner, Elizabeth H.; McPherson.
Holman, Carl Leland; El Dorado.
Huff, Sabra; Savonburg. Deceased.
Huston, Margaret R.; Pittsburg.
Inglish, Eula Morton; *Lamar, Mo.*
Ireland, Anita L.; Weir.
Iserman, Grace Hazel; Pittsburg.
Jackson, Ella Anna; Altoona.
Jackson, Lillian Agnes; Pittsburg.
James, Starling William; Pittsburg.
Jarrett, Majorie; Fort Scott.
Jefferson, Jennie; Independence.
Johnson, Carl; Pittsburg.
Johnson, Ruth; Frontenac.
Johnsten, Paul Brewster; Dephos.
Jones, Blanche; Pittsburg.
Jones, Esse V.; Pittsburg.
Kennedy, Elizabeth Elzina; Opolis.
Kerr, Ferol Peake; Pittsburg.
Kerr, Valda Mae; Pittsburg.
King, Charles Ernest; *Kingfisher, Okla.*
Knotts, Mintie Thelma; Cherokee.
Lake, Carl H.; Lyons.
Leamon, A. Dale; Pittsburg.
Lease, Daisie Viola; Fort Scott.
LeBlicq, Carmen; Pittsburg.
Leyburn, Ruby Louise; Weir.
McCartney, Mamie Katherine; Columbus.
McCully, Maude; Coffeyville.
McDonald, Cora; *Joplin, Mo.*

College Juniors—*Concluded*.

McFarland, Sister Colombiere; St. Paul.
McFarlin, Edith Elizabeth; Pittsburg.
McGinnis, Mrs. Jennie; Cherokee.
McGregor, Jennette Alethea; Columbus.
McKay, Agnes Elizabeth; Independence.
McKee, Myrtle Anna; Girard.
McLean, Margaret; Fort Scott.
McMahin, Alice Mary; Walnut.
McMurtrey, Mabel Wensel; *Ava, Mo.*
McNally, James Ewin; *Joplin, Mo.*
Matter, William Everett; Pittsburg.
Matthews, Jessie Walton; Pittsburg.
Matthews, Mrs. Lutie Belle; Pittsburg.
Meador, Ava; *Carthage, Mo.*
Metzen, Anna; Edna.
Michel, Elsie Lillian; Walnut.
Miller, Bryan R.; Eudora.
Miller, C. Adelle; *Webb City, Mo.*
Miller, Donald W.; Halstead.
Miller, May Anderson; *Joplin, Mo.*
Mitchell, Margaret O.; Pittsburg.
Monahan, Margaret Mary; Frontenac.
Moody, Florence; Columbus.
Moore, Grace; Abilene.
Moss, Louise Anderson; Pittsburg.
Murphy, Ellen Delphine; Girard.
Myers, Anna Lenore; Weir.
Nation, William Roy; Shaw.
Nelson, Adelaide; *Joplin, Mo.*
Nelson, Carl Kibler; Halstead.
Nevius, Theodora Florence; Edna.
Newell, Will L.; Independence.
Niles, Nettie; Liberal.
Oertle, Abraham; *Indianapolis, Ind.*
Oertle, Anna McKeon; *Indianapolis, Ind.*
O'Hara, Kathryn Nora; Frontenac.
Oliver, Hazel May; Pittsburg.
Olson, Ella Genevieve; Savonburg.
Pazze, Sophia J.; Frontenac.
Peterson, Dora May; Weir.
Pettiner, Marjorie Irene; Coffeyville.
Phillips, Lucile; *Joplin, Mo.*
Phillips, William Earl; Pittsburg.
Pittenger, Leah Leone; Cherryvale.
Potter, Jane M.; Weir.
Pressler, Katherine; Fort Scott.
Quackenbush, Jessie; Pittsburg.
Reese, Mattie Lou; Pittsburg.
Reeves, Beatrice Marcella; Fort Scott.
Rex, Anna; *Joplin, Mo.*
Reynolds, Amy; Frontenac.
Ridgeway, Nema; Edna.
Riley, Gladys Louise; Pittsburg.
Roberson, Daisy Ethel; Fort Scott.
Robertson, Arepha Juanita; *Joplin, Mo.*
Robinson, Leah Clair; *Joplin, Mo.*
Ross, Mollye; Parsons.
Rude, Callie Frances; Labette.
Sanders, George Alfred; Columbus.
Schwab, Hester Ellen; Pittsburg.
Scott, Florence Maye; Parsons.
Scott, Floyd LeRoy; Greenleaf.
Scott, Leeta Macy; Parsons.
Seagrave, Ina E.; Fort Scott.
Selders, Paul Ving; *Oklahoma City, Okla.*
Shaver, Gaynell Aimee; Fort Scott.
Shead, L. Merle; Arcadia.
Sheffield, Lona Marion; Pittsburg.
Shewalter, Ruth May; Pittsburg.
Shockey, Buelah Fern; Iola.
Sidwell, Ula Buena; Pittsburg.
Smith, George Leo; *Edmund, Okla.*
Stevens, Mary D.; Fort Scott.
Stinson, Mary Ethel; Emporia.
Streng, Edna Edith; Chetopa.
Sutherland, Launce L.; Walnut.
Taber, Buena Zoe; Pittsburg.
Taber, Mary Iris; Pittsburg.
Taylor, Leona Irene; Dearing.
Teter, Ruby Evelyn; *Alba, Mo.*
Timmons, Leith Agnes; Pittsburg.
Tourtelot, Mrs. G. E.; Galena.
Turkington, Eva Ruth; McCune.
Vogenitz, Mrs. May H.; Hutchinson.
Waddle, Elsie Lenora; Chanute.
Wade, Isabel; *Joplin, Mo.*
Weems, Mary; *Sherman, Tex.*
Wharton, Lowell Brown; Lyons.
Wheeler, Mae; Girard.
Whitaker, Genevieve Mitchell; *Oskaloosa, Ia*
White, Goldie; *Joplin, Mo.*
White, Florence; Weir.
White, Kathleen Mary; Pleasanton.
Wilkins, Alma Belle; Cherokee.
Williams, Ceshel C.; *Bonham, Tex.*
Williams, Winferd Merle; Winfield.
Winn, Pauline; Coffeyville.
Young, William Rankin; Walnut.
Ziegler, Henry Thomas; Pleasanton.

COLLEGE SOPHOMORES.

Adamson, Gladys Marie; Girard.
Aldrich, Hazel; Kingman.
Alexander, Gertrude M.; Pittsburg.
Alexander, LaVon B.; Pittsburg.
Alexander, Marguerite; *Webb City, Mo.*
Allen, Geanie; Arma.
Allison, Mrs. Elsie N.; Parsons.
Allison, Naoma; Chanute.
Ambler, Gladys Louise; *Omaha, Neb.*
Anderson, Clara Elizabeth; Farlington.
Archer, Viola Hazel; Galena.
Asch, Edith; Fort Scott.
Austin, Leola May; Mulberry.
Baker, Harriet M.; Oswego.
Baker, Myrtle Mae; Pittsburg.
Baldridge, Marie; Weir.
Bammann, Lewise K. M.; Girard.
Barnes, Della; Parsons.
Barr, Edna; Cherokee.
Bauer, Erma Marie; *Joplin, Mo.*
Bear, Mary Lydia; Jefferson.
Bear, Stella Esther; Abilene.
Beatty, Elizabeth; Osawatomie.
Bence, Grace; *Webb City, Mo.*
Bennett, Grace Margaret; Scammon.
Bentley, Margaret Stiles; Coffeyville.
Blackman, Belle; *Liberal, Mo.*
Boone, Sister Mary Alexander; St. Paul.
Borden, Hattie Adelia; Girard.
Bowers, Copeland Connelly; Pittsburg.
Boyce, Mabel Venita; Galena.
Bradbury, Consuello Florence; Edna.
Bradshaw, James W.; Kansas City.
Brannum, Nellie Inez; Atlanta.
Brown, Everett Stanley; Winfield.
Bruton, Lottie Marie; Pittsburg.
Bryan, Essie Lee; Galena.
Bryden, Nellie; Fort Scott.
Bucher, Martha E.; *Joplin, Mo.*
Buehler, Hazel Grace; Oswego.
Burgess, Bernice Opal; Scammon.
Burgess, Edwin Thomas; Paola.
Burkett, Alta Frances; Cedar Vale.
Burkholder, Grace Catherine; Coffeyville.
Burnett, Cullin L.; La Cygne.
Burton, Jessie Fletcher Smith; El Dorado.
Butler, Hubert E.; *Houston, Tex.*
Caffey, Marguerite Winn; Pittsburg.
Cameron, Pearl Elizabeth; Altamont.
Capps, Daphna J.; Arcadia.
Carey, Mary Rebecca; Fredonia.
Carlson, Mae Lena; Cherokee.

COLLEGE SOPHOMORES—*Continued.*

Carmela, Sister M.; St. Paul.
Carr, Nora Anne; Parsons.
Carroll, Mary A.; Frontenac.
Carter, Mrs. Anna E.; *Joplin, Mo.*
Carter, Cecile Wanda; Pittsburg.
Carter, Walter Allen; Coffeyville.
Carver, Sullie Blanche; Atlanta.
Chambers, Estella Mae; Coffeyville.
Cherry, Mrs. Nevada; Parsons.
Childs, Sister Mary Dorothea; Coffeyville.
Christianson, Olive May; Caney.
Clarahan, Sister M. Ambrose; Dodge City.
Claxton, Clarence Clayton; Oswego.
Clayton, Nora; *Joplin, Mo.*
Cleavinger, Hattie; Lowemont.
Cline, Elsie Leah; Fredonia.
Cline, John M.; McPherson.
Colburn, Martha Marie; McCune.
Coles, Winifred Aline; *Joplin, Mo.*
Comfort, Sylvia; *Westville, Okla.*
Conboy, Florence; Parsons.
Condra, Theo Lee; Independence.
Conover, Sadie; Pleasanton.
Cook, Ruby Lenore; Pittsburg.
Copher, Nellie Doris; *Fort Worth, Tex.*
Corbey, Myrtle Lee; *Joplin, Mo.*
Cornish, Hester Mae; *Neosho, Mo.*
Costello, Mary Elizabeth; Pittsburg.
Crall, Ethel May; Parsons.
Crook, Rosella; Independence.
Croucher, Mary Marguerite; Osage City.
Crow, Agnes; *Jasper, Mo.*
Curran, Alice Theresa; Pittsburg.
Dalby, Floy Ethel; Havana.
Damm, Lillian Elizabeth; *Joplin, Mo.*
Davenport, Mrs. William; *Webb City, Mo.*
Davies, Mary Ann; Riley.
Davis, Harry; Galena.
Davis, Irma D.; Pittsburg.
DeArmon, Irene Leanore; Parsons.
Dennis, Amy Frances; McCune.
Dennis, Genevieve Alice; Olathe.
Dienst, Barbara Wilhelmina; Coffeyville.
Dills, Edna Mae; Baxter Springs.
Dodd, Jackson A.; Coffeyville.
Dolan, Ellen Mae; Fleming.
Dopking, Hattie; Frontenac.
Doty, Alice Mary; Osage City.
Doty, Charlotte; Pittsburg.
Doty, Jack; Pittsburg.
Doty, Siba Myrtle; Columbus.
Doughman, Lisle L., Mound Valley.
Downing, Louisa Cartre; Galena.
Drake, Jennie; Iola.
Dunbar, Martha; Weir.
Dunlap, Mrs. Addie; *Oronogo, Mo.*
Duvall, Nellie S.; West Mineral.
Edmonson, Mary; *Webb City, Mo.*
Eisenhart, Beatrice Eleanor; Franklin.
Ellis, Vernon Clinton; Humboldt.
Elswick, Lois; Parsons.
End, Josephine Pauline; Fort Scott.
Endicott, Luella Eilene; Pittsburg.
Endicott, Mary Weaver; Pittsburg.
Estes, Floyd E.; Paola.
Ewing, Essie Lucile; Olathe.
Falls, Olive; Altoona.
Ferguson, Myrtle Estella; Pittsburg.
Ferrell, Mrs. Lura Gastineau; Independence.
Fisher, Ann Katheryn; Frontenac.
Fitzgibbon, Marguerite Elizabeth; Oswego.
Flater, Mertie Estella; Hepler.
Flynn, Mae C.; Pittsburg.
Forrester, Hazel Louise; Girard.
Foster, Lena Reah; *Joplin, Mo.*
Fowler, Rowena Juanita; Iola.
Frazure, Marian; Girard.
Freeman, Imogene LaVon; Bronson.
Frendenberger, Bess May; Girard.
Fugate, Mrs. Angeline Phillips; Oswego.
Gardner, Aville Quarrier; Girard.
Gardner, Margaret Elsworth; Pittsburg.
Gibson, Paul Roosevelt; Parsons.
Gilbert, Alva Richard; Pittsburg.
Gilbreath, Hazel; Pittsburg.
Gilmer Olive; *Webb City, Mo.*
Godsey, Viola Louise; *Collinsville, Okla.*
Goodhall, Charles A.; *Winslow, Ariz.*
Goodrum, Bernie L.; Fort Scott.
Graham, Ines Estella; Pittsburg.
Graham, Mary Ellen; Pittsburg.
Grandle, Nina Katherine; Pittsburg.
Graves, Coke Bernard; Pittsburg.
Green, Finnis McGrady; Pittsburg.
Gregg, Helen S.; Pittsburg.
Griffis, Marian Catharine; *Alpina Pass, Ark.*
Griffith, Muriel; Scott City.
Grimes, Mrs. Minnie; Atchison.
Gude, Kathryne Mae; Weir.
Gunsaullus, Marie; Fort Scott.
Hagar, Sister Joachim; St. Paul.
Hall, Rosa Manilla; Pittsburg.
Hankins, Fay E.; Argonia.
Hankins, Opal May; Argonia.
Harwood, Olive M.; Pittsburg.
Hatcher, Evelyn; *Webb City, Mo.*
Hatton, Ferda Hazel; Pittsburg.
Hauser, Winifred H.; Wichita.
Hayden, Zella Vere; *Ash Grove, Mo.*
Hays, Martha; Pleasanton.
Heath, Viola May; Pittsburg.
Hedges, Mildred; Galena.
Helton, Georgia Archer; Galena.
Henderson, Chrystene Maye; Pittsburg.
Henderson, Mrs. Lorena A.; *Joplin, Mo.*
Henley, Eleanor; *Carthage, Mo.*
Holley, Prudence Minerva; Oswego.
Hoppes, Ruth V.; Mulberry.
Howard, Helen Grace; Hepler.
Howard, Ivy Ruth; Cherryvale.
Hubbart, Lola Clementine; Fort Scott.
Hudson, Elva Isabelle; Arma.
Hudson, Faye Lola; Arma.
Hunt, Bessie Cecilia; Frontenac.
Hunts, Maude; Pleasanton.
Hyland, Sister Mary Delphine; Cherryvale.
Ingham, Anna Blanche; Fort Scott.
Ireland, Ruth; Fort Scott.
Jackson, Jesse Walter; Newton.
Jewell, Gladys; Mount Hope.
Jewell, Helen Cornelia; Fulton.
Johnson, Eva C.; Weir.
Jolly, Jaunita Ethel; Longton.
Jones, Lizzie; Frontenac.
Jones, Mary Jane; Independence.
Karn, Retta Mae; Angola.
Kautz, Bernice; Girard.
Kautz, E. Beryl; Girard.
Kautz, Edith Mary; Girard.
Keesling, Charles Ellsworth; Fredonia.
Kelly, Isabelle Mary; Pittsburg.
Kelley, Prudie; Pittsburg.
Kelley, Verna Irene; Pittsburg.
Kennedy, Leah Maurice; Coffeyville.
Kennedy, Ruth Marguerite; Girard.
Kerr, Verna Faye; Pittsburg.
Kiefer, Julius E.; Rosedale.
Kimmey, Reevel Ruth; Erie.
King, Callie M.; Pittsburg.
King, Edith; Pittsburg.
King, Etna Irene; *Chelsea, Okla.*
King, William Frankler; Pittsburg.
Kleinhammer, Mrs. Marie; Caney.
Knight, Corinne Mae; Fort Scott.
Knowlton, Ethel May; Randall.
Koontz, Andrew E.; Columbus.

College Sophomores—*Continued*.

Lanning, Margaret; Frontenac.
Larrick, Flora LaVauche; Leon.
Laughlin, Ruth Mae; Pittsburg.
Lawler, Lota Pearl; Farlington.
Lee, Edith Mary; Galena.
Lee, Ruth Mary; McCune.
Leggett, Lucy A.; Columbus.
Leonard, Beulah; Galena.
Lewis, L. Ruth; Pittsburg.
Liggett, Nellie Vinita; Galena.
Limb, Emma Irene; Pittsburg.
Liston, Myrtle; Altamont.
Livermore, Carrie M.; *Joplin, Mo.*
Lochmiller, Olive M. O'Brien; Independence.
Lockwood, Joseph E.; Kingman.
Long, Ada Claire; Girard.
Lott, Birdie Ewell; Iola.
Lowe, Lavon Mary; Pittsburg.
Lucke, Gladys; Girard.
Lucke, Jessie; Girard.
McBride, Pearl Blanche; Pittsburg.
McCandless, Lizzie Belle; Hutchinson.
McCool, Laura Maude; Opolis.
McCue, Zella; Pittsburg.
McDonald, Mrs. M. W.; *Joplin, Mo.*
McFarland, Ernest Howard; Caney.
McGoey, June Iona; Pittsburg.
McGonigle, Zoe; Pittsburg.
McKee, Kathryn Mae; *Joplin, Mo.*
McKenzie, Dorothy Pearl; Caney.
McKimmey, Lottie Frances; Fort Scott.
McKnight, Jessie Isabelle; Cherryvale.
McLaughlin, Elizabeth; Monmouth.
McLaughlin, Lida; Monmouth.
Malloy, Kate; Cherokee.
Marker, Nettie Idella; Ozawkie.
Martin, Ada Pearl; Chanute.
Martin, Goldie Pearl; Pittsburg.
Masterson, Columbia May; Fort Scott.
Matthews, Robley D. Evans; Pittsburg.
Maudlin, Della R.; La Harpe.
Mayberry, Edith Hailey; Pittsburg.
Mertins, Helen B.; *Carthage, Mo.*
Meslin, Victoria; *Webb City, Mo.*
Meyer, Amelia Pauline; Girard.
Miller, C. Adele; *Webb City Mo.*
Miller, Ethel Ray; *Sherman, Tex.*
Minnear, William Nelson; Coffeyville.
Moore, Sadie Eleanora; Parsons.
Mullikin, Ida Caroline; Cherryvale.
Murphy, Mrs. Ethel C.; West Mineral.
Murray, Janet Mackie; Scammon.
Neighbors, Neville Eliza; Columbus.
Nelson, Gladys Corrinne; Stark.
Nevius, Katie Belle; Edna.
Nibarger, Jessie C.; Girard.
Nicholson, E. Pearle; McCune.
Nyman, Gustav Monrad; *Cincinnati, Ohio.*
Nystrom, Laura; *Tulsa, Okla.*
O'Connell, Kathleen Elizabeth; Independence.
O'Conner, Irene Edith; Fort Scott.
O'Donnell, Sara Cecilia; Scammon.
O'Hara, Josephine Zeta; Frontenac.
Oldham, Georgia Anna; Mulberry.
Oldham, Mary Elizabeth; Pittsburg.
Oliphant, Bess; Columbus.
Ossanna, Matilda Mabel; Chicopee.
Peak, Florence Agnes; Girard.
Pearce, George Thomas; Sterling.
Perrine, Vivian Pauline; *Siloam Springs, Ark.*
Pettner, Mrs. Esther M.; Coffeyville.
Phillips, Fern Field; Elk City.
Phillips, Lucinda Jane; Mulberry.
Phillips, Margaret Hannah; Hutchinson.
Pickerill, Orvall Alfred; Geneseo.
Pierce, Frances Hailey; Pittsburg.
Piper, Beryl Hammers; Scammon.
Popkins, James Robert; Halstead.
Potter, Pauline Lavon; Pittsburg.
Powell, Rosalynd; Osage City.
Puckett, Mildred Marguerite; Galena.
Ramey, Maude E.; Spring Hill.
Ramey, Ruth Grace; Spring Hill.
Ramsey, Mary Elna; Independence.
Randall, Joe Albert; Dalton.
Reardon, Allie Ruth; Liberty.
Redmond, Eleanor Alice; Walnut.
Reed, Bessie Velma; Girard.
Reeves, B. Pearl; Niotaze.
Rencenberger, Charles; Pittsburg.
Richards, Earl B.; Girard.
Richards, Mary Etta; Girard.
Riordan, Sister Bernardine; Wichita.
Robins, Lina; Pittsburg.
Robords, Grace Marjorie; Mound Valley.
Rogers, Mary Evelyn; Louisburg.
Roitz, Tillie Helen; Ringo.
Rose, Grace; *Webb City, Mo.*
Roseberry, Mabel Celeste; Erie.
Roseberry, Minnie Loretta; Erie.
Ross, Ethel Castleman; Parsons.
Ross, Elizabeth; Pittsburg.
Rumbaugh, Luella Florence; Pittsburg.
Russell, Mabel Alice; Cherokee.
Russell, Richard; Mineral.
Saccanne, Guido Herbert; Ringo.
Sampica, Mary Harriet; Columbus.
Satterlee, Rowena Evalyn; Pittsburg.
Schlichting, Ernest C.; Pittsburg.
Schwartz, Esther Caroline; Galena.
Scott, Elsie Mary; Weir.
Sexton, Ruth K.; *Siloam Springs, Ark.*
Seymour, Harold; Pittsburg.
Sheffield, Elva Viola; Arcadia.
Sheffield, John Patterson; Arcadia.
Sheldon, Mabel Marie; Altamont.
Shiffler, Avery Oliver; *Cleveland, Ohio.*
Shinkle, Isabel; Lone Elm.
Shinkle, Wanda; Lone Elm.
Shukers, Burton Twiss; Independence.
Skelton, Evelyn Gertrude; Pittsburg.
Smallwood, Leanora Curtiss; Emporia.
Smiley, Maggie Anna; Pittsburg.
Smiley, Lydia Wilmoth; Pittsburg.
Smith, Beulah A.; Galena.
Smith, Edith Mae; Pittsburg.
Smith, Eva Gladys; *Webb City, Mo.*
Smith, Ethelma Mary; Pittsburg.
Smith, Helene Edmunds; Chetopa.
Smith, Mary Alpha; Chanute.
Smith, Sister M. Berchmans; Hutchinson.
Smith, Ward Perry; *Carl Junction, Mo.*
Smock, Leeanna Jewell; Galena.
Spence, Mabel Leota; Pittsburg.
Sprecher, Winifred Marie; Coffeyville.
Stonecipher, Joseph Edgar; Columbus.
Stough, Winona Davie; Cherokee.
Sullivan, Margaret Frances; Pittsburg.
Sutcliffe, Blanche Lavina; Altoona.
Tabor, Ella Lou; Girard.
Taylor, Pearl E.; Independence.
Tedlock, Neva; Columbus.
Thacher, Blanche May; Great Bend.
Todd, Lora LeMone; Arcadia.
Townsend, Sue; Girard.
Toy, Laura Elizabeth; Cherryvale.
Traylor, Flora Elizabeth; McCune.
Tredway, Josephine; La Harpe.
Turrill, Coral Mary; Weir.
Tyler, May Elizabeth; *Joplin, Mo.*
Utz, Mary Agatha; Pittsburg.
Van Gastel, Pauline; Pittsburg.
Vance, Mrs. J. C.; *Webb City, Mo.*
Vining, George Howard; Altoona.

College Sophomores—*Concluded.*

Wackerle, Abbigail Catheryne; Chetopa.
Wager, Mrs. Margaret Rose; Pittsburg.
Waltz, Geneva Madge; Pittsburg.
Ward, Lora Isabelle; Geuda Springs.
Ward, Wilmott; *Nevada, Mo.*
Weaver, Mrs. Helen G.; Bur Oak.
Webb, Lela Maude; Galena.
Wells, George; Cedar Vale.
Westover, Maurice F.; *Joplin, Mo.*
Whitaker, Alice Cleone; Pittsburg.
Whitaker, Catherine Flora; Pittsburg.
White, Anna; Weir.
Whitehead, Mildred Augusta; Walnut.
Wiedenmann, John Charles; Hepler.
Wilkins, Ollie; Fort Scott.
Willard, Loneta; Arcadia.
Williams, Frances B.; Pittsburg.
Williams, Lena Frances; Coffeyville.
Williams, Lizzie N.; Peru.
Williams, Vida Marie; Coffeyville.
Williams, Winnie Genladees; Arcadia.
Williamson, Grace Woodard; *Joplin, Mo.*
Wilson, Katie; McCune.
Wimp, Marguerite; Pittsburg.
Wing, M. Elizabeth; Fort Scott.
Wohlford, Olive May; Harper.
Woodburn, Lucille; Wichita.
Wright, Arthur Nathaniel; Pittsburg.
Wright, Ruth Lenore; Pittsburg.
Young, Ruth; Weir.

COLLEGE FRESHMEN.

Abbey, Grace; Galena.
Abbey, Thelma Irene; Pleasanton.
Adair, Dora Williams; *Pine Bluff, Ark.*
Akers, Bernice May; Chanute.
Alexander, Dannye Leverda; Pittsburg.
Allen, Frieda Mae; Galena.
Allen, Lillian Maude; Galena.
Allen, Marguerite; Baldwin City.
Allman, Marie; Columbus.
Alyea, Harold Benjamin; Atchison.
Alyea, Paul J.; Atchison.
Amos, Anna Maye; *Hot Springs, Ark.*
Amos, Olive Mae; Columbus.
Anderson, Anna Louise; Osage City.
Anderson, Esther Maurine; Independence.
Anderson, Marian; Rosedale.
Anderson, Leona Pearl; Columbus.
Anderson, Logan McPherson; Columbus.
Andrews, Macy Esther; Pittsburg.
Armstrong, Barbara Lora; Pittsburg.
Armstrong, Cleta Rebecca; Kanopolis.
Armstrong, Nellie Olive; Hiattville.
Arnodo, Esther Amelia; Pittsburg.
Ashmore, Muriel Van Orsdall; Cherokee.
Aton, Rex; Oswego.
Augustine, Sister M.; Galena.
Austin, Ruby Mary; Mulberry.
Autem, Ida; Cherokee.
Bachtel, Bertha O.; Latham.
Bachtel, Ruby Veryl; Latham.
Baird, John Harris; Fontana.
Baker, Gloria Gould; Pittsburg.
Ball, Jessie Mildred; Independence.
Barker, Maude Irene; Toronto.
Barnes, Blanche Evelyn; Mound Valley.
Barnes, William; Weir.
Barr, Dollie Hamblin; Columbus.
Barr, Sadie; Cherokee.
Barrick, Grace M.; Edna.
Bass, May Alice; Farlington.
Bassett, Blanche S.; Walnut.
Bassett, Mary Grace; Walnut.
Batten, Eva Marchbank; Arcadia.
Baty, Theresa Elizabeth; Independence.
Baxter, Earnest Walter; Parsons.
Beale, Ida Hertha; *Lindale, Tex.*
Bean, Bessie May; Pittsburg.
Beane, Bertha Mae; Cherokee.
Beck, Lenora Evelyn; Fontana.
Beck, William Leslie; Osawatomie.
Beecher, Phyllis; Pittsburg.
Bell, Esther; Roseland.
Beltram, Johnnie; Cherokee.
Benear, Minnie Norma; Wayside.
Bernard, Grace Virginia; Parsons.
Berry, Mary; *Joplin, Mo.*
Birge, Mamie N.; Chetopa.
Bissell, Everett S.; Pittsburg.
Black, Pearl Margaret; Coffeyville.
Blackburn, Audrey; Parsons.
Blackburn, Cleo; Morehead.
Blackburn, Evelyn Louise; Parsons.
Blackburn, Jessie; Morehead.
Blackman, Nellie Elta; Bronson.
Blades, Rose; Geneseo.
Blake, Sister Ann Gertrude; St. Paul.
Blair, L. Robert; West Mineral.
Bolinger, Hazel; Redfield.
Bollinger, Marie; Mound Valley.
Bonebrake, Arel Luella; *Pineville, Mo.*
Bonebrake, Eula Vurnice; *Pineville, Mo.*
Bonsal, Mary Ruth; *Joplin, Mo.*
Booker, Clara Ellen; Mound Valley.
Boone, Daniel; Colony.
Boore, Leila Mildred; McCune.
Boore, Mamie; McCune.
Borden, Lula Agnes; Girard.
Bouldin, Thelma Alice; Scammon.
Bowers, Breta; Cherryvale.
Bowers, Vera Ulrica; Cherryvale.
Bowlus, Ardie F.; Mulberry.
Bowman, Evah Irene; *Alba, Mo.*
Bowman, Harold; Valeda.
Boyd, Ada Anna; Chanute.
Boyd, Fred William; Manhattan.
Boyd, Gertrude; Galena.
Boyd, Grace Evelyn; Coffeyville.
Boyer, Neva; Meade.
Bradford, Odessia LaFern; *Webb City, Mo.*
Braley, George Ellison; Horton.
Braschler, Bessie Anna; Cherryvale.
Braschler, Hazelle Jane; Cherryvale.
Brenner, Mary Ellen; Cherokee.
Bridges, Charles D.; Kincaid.
Briggle, Lorenia M.; *Carthage, Mo.*
Briner, Emma Margaret; Oskaloosa.
Brisbin, Leona; Scammon.
Broadus, Leola Sohnne; Parsons.
Brock, Leta Pearl; Altamont.
Brock, Ruth Vida; La Harpe.
Brogan, Irene Mary; St. Paul.
Brook, Foster S.; Wichita.
Brown, Bessie Mae; Hiattville.
Brown, Clara Marie; Frontenac.
Brown, Ethel Ann; Bartlett.
Brown, Flossa Fay; Cherokee.
Brown, Mary Frances; Girard.
Brown, Josephine Edyth; *San Bernardino, Cal.*
Brown, Mary Naylor; Holton.
Bruch, Ida Mabel; Cherryvale.
Brunk, Florence Helena; *Fairfax, Mo.*
Bryson, Bessie Christina; Dennis.
Bryson, Frances Pearl; Dennis.
Buchanan, Esther; Arcadia.
Bucher, Laura; *Joplin, Mo.*
Buck, Margaret Geraldine; Olathe.
Buford, Lucretia Rosebelle; Fort Scott.
Buller, John S.; Canton.
Bumgarner, Loyd William; Pittsburg.

College Freshmen—*Continued*.

Burbank, Helen Ann; *Bluffs. Ill.*
Burgett, Bessie Oleta; West Mineral.
Burkett, Hattie Belle; Pleasanton.
Burkholder, Pearl M.; Coffeyville.
Burway, Elizabeth; Stillwell.
Burwell, Cleta Rebecca; Kanopolis.
Buss, Carrie Heneritta; Walnut.
Butcher, Avis; Garnett.
Butcher, Hazel Edith; El Dorado.
Butler, Mrs. Frankie Louisa; Tyro.
Butler, Mary Ellen; Walnut.
Butts, Ina S.; Nickerson.
Cairns, Elma Irene; Winfield.
Callaway, Jane; *Nevada, Mo.*
Callin, Eugene W.; Pittsburg.
Cameron, Cora Marie; Altamont.
Cameron, Drumond W.; Fort Scott.
Cameron, Florence Alta; Altamont.
Campbell, Florence; *Joplin, Mo.*
Campbell Marion Isabell; Cedar Vale.
Canfield, Marguerite Mary; Scammon.
Canfield, Theressa Sara; Scammon.
Cann, Elizabeth Ann; Pittsburg.
Cann, Winifred; Frontenac.
Canny, Sylvia Simpson; Altamont.
Canty, Jessie Margaret; Buffalo.
Canty, Virginia; Buffalo.
Carl, Edith Annie; Cherryvale.
Carl, Gladys Star; Arma.
Carlton, Ann Helen; Pittsburg.
Carlton, Winifred Helen; Walnut.
Carnahan, Mary W.; *Siloam Springs, Ark.*
Carpenter, Clara Marie; Thayer.
Carpenter, Gertrude; Girard.
Carpenter, Mildred Fernn; Thayer.
Carr, Bonnie Belle; Columbus.
Carter, Loren H.; Russell.
Carter, Maude Elizabeth; Pleasanton.
Carter, Walter Allan; Coffeyville.
Cather, H. Grace; *Jasper, Mo.*
Caughell, Olive Hamaker; Hallowell.
Cavanaugh, Rachel E.; Mulberry.
Chambers, Cecil G.; Hepler.
Chambers, Mira Jane; Fort Scott.
Chambers, Zenia; Hepler.
Champlin, Sylvia Marie; Cedar Vale.
Chase, Alice; Wichita.
Cheek, Bernice Ione; *Carl Junction, Mo.*
Chitwood, Josephine Lucille;
Carl Junction, Mo.
Clark, Anderson Edmond; Parsons.
Clark, Harriette Anne; Pittsburg.
Clark, Ione V.; *Carl Junction, Mo.*
Clark, Laura Viola; Chetopa.
Clark, Margaret; Mulberry.
Clark, Olive Corrinne; *Carl Junction, Mo.*
Clark, Wilmoth; Mound Valley.
Clayton, Ione; *Joplin, Mo.*
Cleavinger, Bettie C.; Lowemont.
Clemens, Mary Mabel; Pittsburg.
Cline, Bertha Catherine; Columbus.
Cline, Edolyne; Linwood.
Cline, Zelma Rose; McPherson.
Clinkenbeard, Eula Agnes; Oswego.
Clinkenbeard, Lucy Irene; Oswego.
Clopton, Mildred Agnes; Galena.
Clouse, Alpha Racheal; Stark.
Clugston, Vedah Elsie; McCune.
Coe, Mary Elizabeth; Morehead.
Coffey, Mrs. Ella; *Tar River, Okla.*
Cole, Zeita Mae; Westphalia.
Collins, Ethel Mae; Walnut.
Collins, Richard Walter; Columbus.
Comstock, Mary Ruby; Elk City.
Conboy, Gladys Margaret; Stillwell.
Conboy, Leila Frances; Stillwell.
Condiff, Gertrude Ellen; Mulberry.
Condra, Minnie Anne; Independence.
Connell, Haidee Rowena; Chanute.
Connett, Vena Carrie; Pittsburg.
Connor, Mrs. Veta; *Liberal, Mo.*
Conrad, Edith Chris; Pittsburg.
Convirs, Callie; *Siloam Springs, Ark.*
Cooke, Lillian Gwendolyn; Baxter Springs.
Cooper, Mrs. Elizabeth J.; *Joplin, Mo.*
Cope, Ruth D.; Independence.
Copenhaver, Daphen D.; McCune.
Cordry, Ida; Parsons.
Corker, Ethel Hay; Carona.
Cornell, Rhoda Elizabeth; Edna.
Correll, Hazel; Galena.
Costello, Anna D.; Pittsburg.
Courtois, Juliet Elisa; Columbus.
Cowan, Dora; *Joplin, Mo.*
Cowden, Harry D.; Pittsburg.
Cowling, Anna Amelia; Leavenworth.
Cowling, Mary Louise; Leavenworth.
Cox, Olive Etta; Elsmore.
Crawford, Ruth Allene; Girard.
Crihfield, Tillie Pinckard; Ashland.
Crites, Windess Eleta; Farlington.
Cronin, Alice; Pittsburg.
Cropper, May Russell; Pittsburg.
Crosby, William S.; *Joplin, Mo.*
Culbertson, Pearl; Altoona.
Cummings, Faye Helen; Erie.
Curnow, Carl Goodwin; Pittsburg.
Curteman, Cathryn Helen; Pittsburg.
Cuthbertson, Jessie Juanita; Pittsburg.
Daggett, Elfeda Belle; Parsons.
Daniel, Helen Elosie; *Catlettsburg, Ky.*
Daniels, Ella Helphenstiene; *Joplin, Mo.*
Daniels, Lillian Loraine; Girard.
Danielson, Edna Mae; Elsmore.
Darling, Xina Blanche; Mound Valley.
Daugherty, Virgie E.; Baird.
Davidson, Alda; Girard.
Davidson, Ethel; Chanute.
Davidson, Lallah; Elk City.
Davidson, Mamie Venera; *Wagoner, Okla.*
Davis, Edna Elizabeth; Longton.
Davis, Elda Aluena; Mound City.
Davis, Faye; Altoona.
Davis, L. E.; Winchester.
Davis, Lois L.; *Drexel, Mo.*
Davis, Mary Elizabeth; Olathe.
Davison, Leota; *Joplin, Mo.*
Dean, Elsie; Nickerson
Dean, Majorie Louise; Columbus.
Deill, Ada Mabel; McCune.
Denmon, Nellie Leora; Pittsburg.
Dennis, Grace Lenore; Parsons.
Devers, Laura Kenaston; *Carthage, Mo.*
DeWald, Martha; Russell.
Dewell, Opal M.; Stark.
Dewey, Mary; Pittsburg.
Dewhirst, Mabel N.; Farlington.
Dewhirst, Nina E.; Farlington.
Dickerson, Orra May; Dearing.
Dickey, Lillie Belle; Mildred.
Dickinson, Mrs. Fannie B.; Webb City.
Ditson, Dora Isabelle; Galena.
Ditson, Jessie Anna; Galena.
Ditson, John Raymond; Galena.
Doherty, Edna Catherine; Olathe.
Donahue, Agnes Theresa; St. Paul.
Doring, Floyd; Pittsburg.
Dorsey, Arthur Milton; Weir.
Downing, Mable; *Joplin, Mo.*
Driscoll, Mary Martha; Wichita.
Dues, Olive Mathews; Pittsburg.
Dugan, Josephine Alma Jones; Galena.
Dugger, Clara May; Columbus.
Dugger, Faye Hazel; Columbus.
Duling, Agnes Kathleen; Walnut.
Duncan, Marie Patricia; Girard.
Dyer, Rowena Opal; Pittsburg.

COLLEGE FRESHMEN—*Continued*.

Early, Dorothy; Frontenac.
Early, Mattie Eugenia; Valley Falls.
Early, Thomas Deforrest; Pittsburg.
Easley, Alice Ozena; Altamont.
Eaton, Frances Naomi; Galesburg.
Eaton, Ivah E.; Galesburg.
Edgerton, Mary; St. Paul.
Edwards, Mrs. J. B.; Pittsburg.
Edwards, Ralph M.; Iola.
Edwards, Vesta Marie; Iola.
Egger, Lucy Juliene; West Mineral.
Eisenhart, Vera; Franklin.
Elder, Adaline Leith; Pittsburg.
Eller, Frances Anna; Carona.
Elliott, Ima Bessie; Morehead.
Elliott, Iva Josephine; Morehead.
Elliott, Lottie Irene; Pittsburg.
Elliott, Pearl Ellen; Savonburg.
Elliott, William Harold; Savonburg.
Elwyn, Hershall Ona; Girard.
Engle, James William; Alden.
Entzminger, Ruby Salome; Bronson.
Erker, Emma Elizabeth; Wichita.
Ermel, Freeda Julia; Bronson.
Evans, Elizabeth Eleta; Cherryvale.
Evans, Eva M.; Wayside.
Evans, Ruth May; Pittsburg.
Evans, William Edward; Mulberry.
Fagg, Winifred Marie; Baxter Springs.
Fairhurst, Joe; Winchester.
Fairman, Evelyn Marie; Altamont.
Falkinburg, Olivia; Coffeyville.
Falls, Gwendolyn; Altoona.
Fanatia, Floy Valeria; Shaw.
Farrington, Veda Fern; Chetopa.
Fell, Elizabeth; Columbus.
Fenn, Lois Ellen; Coffeyville.
Fenn, Mary Nellie; *Joplin, Mo.*
Ferguson, Minta Marie; Pittsburg.
Ferpotto, Edith Mary; Frontenac.
Ferns, Mrs. Ada Margaret; Scammon.
Field, Frederick M.; Columbus.
Field, June Elizabeth; Columbus.
Fields, Evalena Anna; Fort Scott.
Fields, Lillian Melvin; Pittsburg.
Fields, Raymond Erastus; Fort Scott.
Fink, Mary Evelyn; Pittsburg.
Flagg, Darlene Hazel; Pittsburg.
Flynn, Paula Mary; Parsons.
Foote, Thelma Dorothy; Spring Hill.
Foote, Winifred E.; Spring Hill.
Foreman, Vivian Alberta; Cherokee.
Foster, Agnes; Morehead.
Foster, Marguerite Mary; Morehead.
Fought, Olive Duette; Erie.
Fowler, Mrs. J. C.; Pittsburg.
Fox, Hattie LeCompte; *Carthage, Mo.*
Frame, Mary Cyrene; McCune.
Francisco, Winifred; Oswego.
Frazier, Elizabeth Muriel; Girard.
Freeburg, Homer Gilbert; McCune.
Freeman, Ethyl Searcy; *Webb City, Mo.*
Freeman, Frances Darlene; El Dorado.
Frendenberger, Ida Christina; *Sedalia, Mo.*
Frisch, Jacob Joseph; Westphalia.
Fry, Marie Jane; *Claremore, Okla.*
Fuchs, Golden Caroline; Wichita.
Fuller, Dorothea May; Girard.
Fults, Viola Mildred; Stillwell.
Furneaux, Evva Aldora; Walnut.
Gail, Gertrude Marie; Chetopa.
Gail, Theodore Henry; Chetopa.
Gail, Walter August; Chetopa.
Gallet, Ethel Josephine; Pittsburg.
Gallet, Marie Edith; Pittsburg.
Gantz, Albert Lee; Plevna.
Garrett, Mabel L.; Coffeyville.
Geeder, Katherine Gibson; Pittsburg.
Gibson, Belle; Boicourt.
Gibson, Laura F.; Iola.
Gilbert, Elsworth Claud; Pittsburg.
Gilbert, Grace Maie; McCune.
Gill, Lucille Myrtle; Cherryvale.
Gilliland, Dorothy; Coffeyville.
Gilmore, Florence Ella; Columbus.
Glynn, Sister Margaret Mary; Bucyrus.
Gold, Mrs. E. J.; *Meriden, Iowa.*
Good, John Melvin; Louisburg.
Gossett, Serena May; Pittsburg.
Graddy, Raymond A.; *Joplin, Mo.*
Graham, Margaret; Pittsburg.
Graham, Marjorie; *Vinita, Okla.*
Grandle, Harvey Marion; Pittsburg.
Grant, Clara Loretta; Scammon.
Grant, Elizabeth; Scammon.
Grant, Sara Agatha; Scammon.
Grasty, Violet Jane; Blue Mound.
Gray, Hazel Marie; Girard.
Gray, Helen Maria; Tyro.
Gray, Jane Sherwood; Weir.
Green, Ida Mary; Redfield.
Green, Irma Manilla; Roseland.
Green, Leland Vee; Cherokee.
Green, Ruth; Spring Hill.
Greenfield, Helen Olive; McCune.
Gregory, Blanche Marcia; Walnut.
Gregory, Ruth Eleanor; Scammon.
Greve, Violet Agnes; Earlton.
Gribble, Gladys; Columbus.
Gribble, Pearl Mildred; Arkansas City.
Griffith, Vera Marie; *Joplin, Mo.*
Guntle, Edith Fern; Oswego.
Guthridge, Lea A.; Pittsburg.
Hadley, Hazel Belle; El Dorado.
Hadlock, Edith Ermine; Cherokee.
Haffa, Mrs. Mary Grace; Merriam.
Haggard, Grace; Longton.
Hailey, Elsie Rosalba; Coffeyville.
Haley, Anna Katharyn; Mound City.
Hall, Fern Irene; *Amsterdam, Mo.*
Hall, Ida Mildred; Rose Hill.
Hall, Nellie Mary; Girard.
Hall, Stella Myrtle; *Newkirk, Okla.*
Hall, Velma Frances; *Newkirk, Okla.*
Halliday, Mary Jane; Mulberry.
Hambleton, Susie Valentine; Edna.
Hamilton, Bernice June; McCune.
Hamilton, Clara Pearle; *Siloam Springs, Ark.*
Hamilton, Louise; Weir.
Hammond, Forrest Fern; Mulberry.
Haner, Merritt Edwin; Galena.
Hankins, Ruby Grace; Weir.
Harbert, Allie Sherman; Altoona.
Harkey, Mary; Lenexa.
Harlan, Hazel Aura; *Webb City, Mo.*
Harley, LaVerne Myrtle; Fort Scott.
Harris, Edgar Walter; Kansas City.
Harris, Emma Mabel; Coffeyville.
Harris, Hazelle Ursela; Topeka.
Harris, Jack George; Kansas City.
Harris, Stella May; Arcadia.
Harrison, Mabel; Wilder.
Hartman, Hazel Mae; Monmouth.
Harvey, Myrtle; McCune.
Hathaway, Irma Rilla; Pittsburg.
Hawk, Charles Ernest; Pittsburg.
Hawley, Orrin E., *Sherman, Tex.*
Haworth, Ruth Verda; Leavenworth
Heckethorn, Lestor O.; McPherson.
Heckethorne, Vellma; *Carthage, Mo.*
Hedrick, Alma Odessa; Liberty.
Helma, Anna Lena; *Joplin, Mo.*
Helm, Florence; *Joplin, Mo.*
Helm, Marie; Chanute.
Henderson, Stella May; Moran.
Hendrickson, Frances Juanita; Pittsburg.

COLLEGE FRESHMEN—*Continued.*

Henley, Ursula Christina; Olathe.
Henninger, Pearl Rebecca; La Harpe.
Henrikson, Aino Elma; Mulberry.
Henrikson, Hilja Sivia; Mulberry.
Henry, Inez M.; Coffeyville.
Henshaw, Carrie Alice; Mound Valley.
Henshaw, Mabel Frances; Mound Valley.
Herron, Mabel Esther; Radley.
Herron, Mary Frances; Sterling.
Hersh, Ethel Ruth; Morehead.
Hetz, Florence Elizabeth; *Carthage, Mo.*
Hewitt, May Kennard; *Plainville, Mo.*
Hiatt, Charles Albert; Blue Mound.
Higgins, Ellen Josephine; Chicopee.
Hille, Dorothea Lee; *Jasper, Mo.*
Hinton, Carrie Katherine; Fulton.
Hite, Elsie Louise; Mildred.
Hoard, Ethel Emiline; Pittsburg.
Hobson, Helen Georgia; Kingman.
Hobson, Marie Elizabeth; Pittsburg.
Hobson, Pauline; Kingman.
Hockinson, Mabel Bertha; Lenexa.
Hoffman, Nola Nadine; Iola.
Holcomb, Esther Lolita; Bucyrus.
Holden, Pearl McCoy; *Carl Junction, Mo.*
Holley, Florence May; Oswego.
Hollingsworth, Vesta Allene; McPherson.
Hoover, Winnifred Kathryn; Westmoreland.
Hope, Mary Beth; Pittsburg.
Hornbuckle, Mabel; Pittsburg.
Horton, Inez Louise; Chetopa.
Horton, Judith Anna; Coffeyville.
Howell, Donna Lee; Labette.
Howell, Lillian Jean; Havana.
Howerton, Ethel; Chanute.
Hudiburg, Leo Everett; Independence.
Hudson, Harold; Pittsburg.
Huff, Emma; Savonburg.
Huff, Ruth Ann; *Gravette, Ark.*
Huffman, Clarice D.; Hepler.
Huffman, Earl Oscar; Holton.
Hughes, Anna E.; Scammon.
Hughes, Mary Estella; Scammon.
Hugo, Mabel Dorothy; Walnut.
Hummer, Elsie Hildred; Earlton.
Hunker, Ruth Dorothy; Fort Scott.
Hunsaker, Hazel Irene; Arma.
Hunt, Carrie M.; Sedgwick.
Hunt, Kathryn Regina; Frontenac.
Husted, Orval Chester; Horton.
Hutcheson, Dallas Paul; Pittsburg.
Hutchinson, Nora Marie; Mulberry.
Hyde, Bertha Mae; Altoona.
Hyndman, J. M.; Pittsburg.
Imhoff, Gertrude; Cherokee.
Isenman, Ina Pearl; Pittsburg.
Iserman, Ruth Lillian; Pittsburg.
Jaccard, Carrie; *Webb City, Mo.*
Jack, Pearl Irma; Wichita.
Jackson, Marjorie H.; Pittsburg.
Jackson, Minnie Doyle; La Harpe.
Jackson, Ruby Oletha; Chetopa.
Jacobs, Ernestine; *Carthage, Mo.*
James, Allene Falls; Altoona.
Jarrett, Lulu Beth; Earlton.
Jenkins, Evelyn; Scammon.
Jenkins, Gladys; Danville.
Jenkins, Harry Earl; Mulberry.
Jennings, Adelaide Irene; Girard.
Jessup, Dessa M.; McCune.
Jewett, Earl Albert; Pittsburg.
Johnson, Clifford Rollie; Fort Scott.
Johnson, Mamie Iona; Fort Scott.
Johnson, Nelse Homer; Savonburg. Deceased.
Johnston, Paul Ernest; Arcadia.
Joiner, Ruth Victoria; Columbus.
Jones, Alma Eusevia; *Webb City, Mo.*
Jones, Earl Robert; Pittsburg.
Jones, Helen Ardellia; *Fort Smith, Ark.*
Jones, Leona Grace; McPherson.
Jones, Vercia Beatrice; Edna.
Jones, Samuel Oscar; Pittsburg.
Jordan, Minnie Manilla; Rantoul.
Joshua, Wilhelmina; Columbus.
Kanarr, Bessie Edith; Fall River.
Kautz, Iowa; Girard.
Kaylor, Dolly Mae; Mulberry.
Keating, Helen Margaret; Fort Scott.
Keating, Mary Cecilia; Fulton.
Kelley, Annie Mae; McCune.
Kelly, Mary W.; Edgerton.
Kelly, Regina Ann; Frontenac.
Kelly, Ruby H.; *Joplin, Mo.*
Kelsey, Mrs. Walter; Hutchinson.
Kennedy, Leora Fay; Buffalo.
Kenney, Katherine Anna; Morehead.
Kenney, Mary Ellen; Mound City.
Kester, Laura Leona; Iola.
Ketchum, Blanhe; Galena.
Kidder, Maurice A.; Pittsburg.
Kiddo, Esther Jane; Oswego.
Kimmel, Earl H.; Wichita.
Kirby, Mary Louise; Cedar Vale.
Kirk, Dora; Parsons.
Kirn, Anna Christena; Rosedale.
Klotz, Bernice; Kanopolis.
Knotts, Zelda; Cherokee.
Koontz, Alta May; Columbus.
Koopman, Frederick Louis; Pittsburg.
Krieckhaus, Harriette Catherine; *Oakland, Mo.*
Krog, Anna Gertrude; Girard.
Krog, Margaret Elizabeth; Girard.
Kutz, Ruth; Parsons.
Laizure, Adah Lovina; Columbus.
Lake, Mrs. Ella May; Medicine Lodge.
Lambdin, Helen Dorothy; Savonburg.
Lamborne, Sarah Gladys; Pittsburg.
Laney, Maude; Pittsburg.
Lange, Adeline Gail; McCune.
Largent, Christel Pearl; *Jane, Mo.*
Laughlin, Nettie V.; *Drexel, Mo.*
Lawrence, Velma Mary; Chiles.
Lawson, Mary Elizabeth; *Alba, Mo.*
Layton, Matie C.; Chetopa.
Lee, Ethel Jessie; *Fort Smith, Ark.*
Lee, Maude Mae; Galena.
Lee, Rosella Mae; Minneapolis.
Leighty, Glen W.; Le Roy.
Lember, Lillian Marie; Girard.
Lemon, Mrs. Grace Crawford; Pittsburg.
Lenox, Sarah Emma; Cherryvale.
Leonard, Mona B.; Cedar Vale.
Lesher, Louise; Girard.
Lesniak, Helen Elizabeth; Frontenac.
Lesslie, Earl Jasper; Independence.
Lewis, Marie; Pittsburg.
Limity, Katie Marie; Pittsburg.
Lindburg, Linda Maria; Osage City.
Lindsley, Clinton Archie; Altoona.
Link, Ada Jane; Scammon.
Lintecum, Martha M.; Englevale.
List, Fred Peter; *West Tulsa, Okla.*
Livermore, Bessie K.; *Joplin, Mo.*
Livingston, Alice; Edna.
Livingston, Helen Alice; Burden.
Lochr, Esther Moore; *Carthage, Mo.*
Lomax, Mary Elsie; Cherryvale.
Longstaff, Anna; Scammon.
Loudenslager, Nina Marie; *Carthage, Mo.*
Loveless, Esther Belton; Herington.
Loveless, William Franklin; Ness City.
Lowdermilk, Eleanor Patricia F.; Galena.
Lowe, Fannie Lee; Coffeyville.
Lowe, Zelma Ruth; Ozawkie.
Lowry, Ella; *Joplin, Mo.*
Lozier, Alma Leah; Edna.
Ludlow, Ethel; Pittsburg.

COLLEGE FRESHMEN—*Continued*.

Ludlow, James Herbert; Pittsburg.
Lundine, Evelyn Amelia; Chanute.
Lyngar, Marjorie May; *Carthage, Mo.*
Lytle, Clara May; Chetopa.
McAnnally, Rena; Neodesha.
McBride, Cornelia; Treece.
McCafferty, Eula Lee; *Ozark, Mo.*
McCall, Ruth Edith; Columbus.
McCall, Wilma Mary; Caney.
McCammack, Emmett; *Muskogee, Okla.*
McCants, Jane Frances; Cherokee.
McCarthy, Mary; Parsons.
McCartney, Sister M. Gabriel; Bucyrus.
McCaskill, Agnes Ruth; Pittsburg.
McCaul, Emma Dean; Elk City.
McCloud, Rose Belle; McCune.
McCormick, Majorie Lucille; Chetopa.
McCoy, Alene Lynn; Pittsburg.
McCoy, Esther; *Carl Junction, Mo.*
McCracken, Florence Edna; Farlington.
McCray, Charles S.; Parsons.
McCray, John Hermann; Pittsburg.
McCurry, Leona Belle; Peru.
McCurry, Ruth; Peru.
McDaniel, Robert Headly; *Vinita, Okla.*
McDonald, Mrs. Cora; Columbus.
McFadyen, Lillian Maude; Frontenac.
McFerron, Charles E.; Weir.
McGhie, Mildred Pauline; Columbus.
McGowan, John; McCune.
McIlwaine, Athlyn Conover; Hoisington.
McIlwaine, Ralph Waldo; Hoisington.
McKinley, Lysle Bernard; Pittsburg.
McKinnon, Helen Frances; *Colfax, La.*
McLean, Marie Theresa; Paola.
McMurray, Blanche; Latham.
McQuoid, Frances Althea; Colony.
Maginnis, Mabel Alice; Wichita.
Maher, Ruth; Osawatomie.
Mahin, Charles Albert; Cheney.
Mandeville, May Nina; Kingman.
Mantooth, Frank B.; Jefferson.
Marie, Sister Mel; Pittsburg.
Markle, Harriet F.; Pittsburg.
Marks, Fern Adell; Columbus.
Marsh, Edith Katheryn; Pittsburg.
Marshall, Irene Mason; Winfield.
Marshall, Mabel Sloan; Colony.
Martin, Gertrude Amelia; Independence.
Martin, Hazel S.; *Lamar, Mo.*
Martin, Josie Millison; Pittsburg.
Mash, Augusta; Oswego.
Mason, Rosa; Labette.
Mason, Thomas Eldon; Fort Scott.
Mathes, Fern Cleone; Pittsburg.
Matney, Hyacinth Alta; Wichita.
Mattison, Everett T.; Mount Hope.
May, Fay Fannie; Pittsburg.
May, Sister Loretto; *Tulsa, Okla.*
Mayfield, Antha Beatrice; Conway Springs.
Mayfield, Edna Pearl; Chetopa.
Means, Gertrude Margaret; Chanute.
Meehan, Edward John; Pittsburg.
Megonigle, Electa; Elk City.
Mellen, Edna; Erie.
Mendenhall, Robert Miller; Pittsburg.
Menefee, Ethel; Paola.
Merciez, Adelaide Gertrude; Scammon.
Merciez, Ida Gertrude; Roseland.
Meredith, Harriet Belle; *Joplin, Mo.*
Merrifield, Glenn; Longton.
Metsker, Grace Lee; *Joplin, Mo.*
Meyer, Sister M. Angela; Paola.
Mezel, Mabel Clara; Mulberry.
Micheal, Clementine; Frontenac.
Middleton, Zella; Altoona.
Miller, Nancy Esther; Beverly.
Miller, Reuben Franklin; Parsons.
Millikin, Virginia Floyd Greene; Galena.
Minnear, Emma Belle; Coffeyville.
Mitchell, Alice Irene; Columbus.
Mitchell, Mary Ann; Cherokee.
Mitchell, Thelma Lois; Pittsburg.
Moeller, Margaret; Galena.
Mogan, Mary Delphine; Frontenac.
Moherman, Laura Fox C. B.; Wellsville.
Mohler, James Monroe; *Liberal, Mo.*
Molohan, Irene; Parsons.
Monahan, Agnes Ann; Frontenac.
Monahan, Euphemia Regina; Frontenac.
Montee, Hazel Marie; Pittsburg.
Montee, Ruth Duene; Pittsburg.
Montgomery, Luella Jane; La Harpe.
Moody, Mrs. Nellie; Independence.
Moody, Rosella; Fort Scott.
Moore, Dorothy Marcette; Pittsburg.
Moore, Gladys Anna; Valeda.
Moore, Herbert Wayne; Geneseo.
Moore, Lloyd Calhoun; Grenola.
Moran, Kathryn B.; *Webb City, Mo.*
Morehead, Blanche Gwendolyn; Chanute.
Morgan, Aletha Mae; Monmouth.
Morgan, Eunice Ethel; Frontenac.
Morgan, Isabel Josephine; Frontenac.
Morgan, Ivy May; Fort Scott.
Morgan, Ruby Elva; Scammon.
Morris, Mary; Frontenac.
Morrison, Eloda George; Chetopa.
Morton, Evetta Rose; Pittsburg.
Mott, Ethel Coralie; Columbus.
Moyer, Grace Mildred; Savonburg.
Muchmore, Merle Emily; Winfield.
Muckleroy, Minnie; Kansas City.
Mudd, Myrtle Fredonia; Iola.
Muir, Irma Irene; Chautauqua.
Mull, Mary Elizabeth; Gardner.
Mullen, Hattie Rosella; Labette.
Munday, Willie; *Joplin, Mo.*
Murn, Frances Evelyn; Frontenac.
Murphy, Daisy Phyrne; Bartlett.
Murphy, Mary Winifred; Frontenac.
Murphy, Minnie Blanche; Chetopa.
Myers, Georgia Kathryn; Fall River.
Myers, Jewell E.; Weir.
Nation, Milton Wallace; Erie.
Nation, Seth Austin; Erie.
Neal, Bessie Anna; Garden City.
Neals, Mildred Ethelyn; Coffeyville.
Needham, Sudie Catherine; Arcadia.
Nelson, Beatrice Eleanor; Dearing.
Nelson, Edith Viola; Pittsburg.
Nelson, Mary Brumback; Pittsburg.
Nelson, Zella Leigh; Mound Valley.
Neth, Mary Rosa; *Liberty, Mo.*
Newacheck, Minnetta Rose; El Dorado.
Newcomer, Charles Andrew; Galena.
Newton, Alice; El Dorado.
Nifong, Georgia Marie; Pittsburg.
Norwood, Warren Ross; Tonganoxie.
Oberwortmann, Mabel Marie; Chetopa.
O'Bryan, Iola; Girard.
O'Dell, Bessie Belle; Pittsburg.
O'Dell, Clyde Herman; *Asbury, Mo.*
O'Donnell, Sara Cecilia; Scammon.
Ohmart, Dorothy Wanda; Pittsburg.
Oliphant, Hazel Faye; Erie.
Oliphant, Opal Fern; Erie;
Oliver, Ella Thelma; Pittsburg.
Olson, Mildred Josephine; Savonburg.
Olson, Nada Fidelia; Elsmore.
O'Neall, Beatrice Carolton; *Carthage, Mo.*
Opdyke, Anne Middleton; Altoona.
Opie, Earl Frank; Pittsburg.
Opie, Melvin Howard; Pittsburg.
Otterman, Edith Hazel; Mound Valley.
Page, Velma Maxine; Cherokee.
Page, Zella Ruby; Lawrence.
Pahlow, Hanna; *Lamar, Mo.*

College Freshmen—*Continued.*

Paige, Lena May; Hutchinson.
Palling, Dorothy; Pleasanton.
Pancost, Gladys Ava; Galva.
Parker, Charity Faye; Caney.
Parker, Jeanette Elliott; *Van Buren, Ark.*
Parker, Rilla Leone; La Cygne.
Parkes, Mrs. Mildred; Cherokee.
Paterson, Hannah; Weir.
Patterson, Emily Julia; Coffeyville.
Patterson, Gladys Augusta; Niotaze.
Payton, Walter B.; *Blackwell, Okla.*
Pearce, Lola Irene; Galena.
Pearson, Besse Eleanor; Columbus.
Pease, Ruth Theodore; Pittsburg.
Perry, Florence Lucille; Randall.
Pellett, Mary Gertrude; Fort Scott.
Pellett, Myrtle Elizabeth; Fort Scott.
Pember, Mrs. Ethel; Parsons.
Pendleton, Lucille; Havana.
Perkins, Carlyle Miller; *Carthage, Mo.*
Perkins, Inez VaLerie; Beverly.
Perry, Bertha Jane; Bronson.
Perry, Raymond Alfred; Stillwell.
Pfremmer, Ralph Kendrick; Baxter Springs.
Phelps, Kittie; Olathe.
Phillips, Hazel Irene; Iola.
Phillips, Harvey Gordon; *Minden, Mo.*
Phillips, Mary Chellis; Yates Center.
Pickens, Paul Raymond; *Maryville, Mo.*
Pickering, Eva Pauline; Galena.
Pierpont, Blanche Hazel; Pittsburg.
Pilkington, Ethel Mary; Roseland.
Pitts, Ada Mae; Fort Scott.
Pitts, Zetta; Augusta.
Plagens, Hertha; Pittsburg.
Pohek, Marguerite Virginia; Pittsburg.
Pollard, Verna E.; El Dorado.
Ponsler, Verna Mae; Kimball.
Poore, Mary Irene; La Cygne.
Pope, Anna Cecilia; Mulberry.
Popkins, Charles Wesley; Halstead.
Post, Della Leah; Mound City.
Preston, Leana Alice; Agricola.
Preyer, Roy E.; Girard.
Price, Dewey; Pittsburg.
Price, Mary; Arma.
Provan, Margaret May; Arcadia.
Pugh, Virgil; Erie.
Puls, Katie; Attica.
Putman, Barbara Katharine; Bucyrus.
Radley, Helen June; Winfield.
Ransom, Anna Belle; La Harpe.
Rathfon, Bess; Erie.
Reagan, M. F.; *Tulsa, Okla.*
Reckards, Estella Isabell; Topeka.
Redman, Lavena; *Joplin, Mo.*
Redmond, Mary Eleanor; Wichita.
Reed, Olive M.; *Liberal, Mo.*
Reedy, Leta May; Bartlett.
Reeves, Eva May; Kanopolis.
Reeves, Margaret Helen; Walnut.
Reeves, Minnie Jane; Kanopolis.
Regan, Agnes; *Joplin, Mo.*
Regan, Dora; *Joplin, Mo.*
Regan, Mary; *Joplin, Mo.*
Reid, Bernice Lenore; Morehead.
Reid, Flora Gene; Scammon.
Reiter, Harley Lee; Beloit.
Reitz, Esther Jane; Olathe.
Rex, Mrs Anna V.; *Joplin, Mo.*
Rexford, Florence Eudora; Morehead.
Reynolds, Ernest William; Fort Scott.
Reynolds, Roy Chester; Fort Scott.
Rice, Gladys Pearl; Erie.
Richards, Chester Louis; Kansas City.
Richman, Faye; *Carl Junction, Mo.*
Rickner, Mazie McKee; Galena.
Riley, Leola Marie; Savonburg.
Rinker, Dottie; Liberty.
Riordan, Catharine Anne; Pittsburg.
Riordan, Bridget; Pittsburg.
Roberts, Eva Marguerite; Girard.
Roberts, Richard H.; Burrton.
Roberts, Sarah Zelotes; *Webb City, Mo.*
Robinson, Elsie M.; Columbus.
Roe, Harold LeRoy; Pittsburg.
Roe, Lucy Gertrude; Olathe.
Rogers, Mabel Gertrude; *Carthage, Mo.*
Rogers, Sallie Rosalee; Ottawa.
Rondelli, John; Chicopee.
Rose, Grace; *Joplin, Mo.*
Roseberry, Edith Marie; St. Paul.
Roseboom, Florence; Girard.
Roseboom, Martha Priscilla; Girard.
Rosebrough, Mrs. Mary Eva; Elk City.
Rosenberry, Bonnie; *Asbury, Mo.*
Ross, Ethel Grace; Winfield.
Ross, Julia Irene Ruth; Oswego.
Ross, Oleeta; Winfield.
Roweth, Olive Pearl; Redfield.
Rowley, Eva Mabel; *Bartlesville, Okla.*
Rowley, Rena; *Bartlesville, Okla.*
Rucker, Gladys May; Edna.
Rue, Opal Marie; McPherson.
Rumback, Docia Edna; Savonburg.
Rumbley, Olive M.; Chanute.
Rumbley, Velma; Chanute.
Rumery, Mae Leila; Columbus.
Runkle, Selma Lovina; Hiattville.
Rush, Helen Chlorene; Mulberry.
Rush, Margaret Abby; Girard.
Russell, Marguerite Alberta; Pittsburg.
Russum, Cuba Jane; Erie.
Rust, Mrs. Lucille Osborn; Altamont.
Ryan, Mary Evelyn; Mineral.
Ryan, Richard Morgan; Pittsburg.
Saccanne, Jennie J.; Ringo.
Sanders, Almedia May; Bennington.
Sare, Neda Malda; Erie.
Sauer, Gertrude Pauline; Girard.
Schmidt, Elizabeth; Oswego.
Schmidt, Lillian; Potwin.
Schneider, Hallie; *Asbury, Mo.*
Schreiner, Florence Eulalia; Columbus.
Schulte, Paul Jacob; Westphalia.
Schwab, John William; Pittsburg.
Schwalb, Minnie; *Douthat, Okla.*
Scott, Dorothea Gertrude; Thayer.
Scott, Dorothy Mae; Arcadia.
Scott, Everett Ernest; Weir.
Scott, Julia Violet; Parsons.
Scott, Lenore Helen; El Dorado.
Scott, Lewis William; Parsons.
Scott, Marian Elizabeth; El Dorado.
Scott, Thelma Pauline; Chanute.
Scott, William Alexander; Detroit.
Seidel, Christine Barbara; Moran.
Self, Verna Ray; Independence.
Sell, Paul Lewis; Pittsburg.
Sellers, Utha Myrl; Randall.
Seymour, Esther; Columbus.
Seymour, William Hawley; Pittsburg.
Shaller, Alice Maude; *Canadian, Tex.*
Shannon, Gladys Amelia; Sedan.
Shead, Edith Louise; Arcadia.
Sheldon, Donald R.; Altamont.
Shellhorn, Monzella Jemima; Leavenworth.
Sherman, Howard Ardworth; Elk City.
Sherwood, Viola May; Coffeyville.
Shiefelbein, Faye Shirley; Pittsburg.
Shields, Edna May; Olathe.
Shireman, Nellie May; Walnut.
Shirron, Beulah Eleanora; *Webb City, Mo.*
Shultz, Carrie; Longton.
Siemsen, Hattie Caroline; Lindsborg.
Simmons, Dorothy Marie; Fort Scott.
Simmons, Rosa Belle; Fort Scott.
Simpson, Ruth; Gardner.

COLLEGE FRESHMEN—*Continued*.

Simms, Chester A.; *Vinita, Okla.*
Sims, Clifford Louis; Fort Scott.
Sinclear, Florence Georgia; Walnut.
Sipes, Gladys Ameda; Pittsburg.
Skidmore, James Edward; Columbus.
Slater, Anna May; Elk City.
Small, Vivian Valentine; Ford.
Smalley, Ralph Thomas; Columbus.
Smith, Annetta Lee; *Sarcoxie, Mo.*
Smith, Aurora Franzetta; *Sedalia, Mo.*
Smith, Edna Hazel; Bronson.
Smith, Emanuel D.; Caldwell.
Smith, Eva Gladys; *Webb City, Mo.*
Smith, Evelyn Alma; Pittsburg.
Smith, Florence Mildred; Pittsburg.
Smith, Gerald Walker; Pittsburg.
Smith, Gordon L.; Pittsburg.
Smith, Mabel Eula; Mapleton.
Smith, Paul; Erie.
Smith, Ruby Virginia; *Oklahoma City, Okla.*
Smith, Stella Lucretia; Morehead.
Smith, Cera Irene; Burden.
Snow, Ruth Agnes; Cherokee.
Snyder, Emma Kathleen; Pittsburg.
Snyder, Gladys; Columbus.
Snyder, Inez M.; Parsons.
Snyder, Mary Elva; Pittsburg.
Sowder, Mrs. Esther Brown; Galena.
Spencer, Arvia Ethel; Mound Valley.
Spencer, Willie May; Coffeyville.
Sprenger, Alice M.; Erie.
Spriggs, Hazel Eunice; McCune.
Stahley, Edith Gladys; Mulberry.
Stanley, Georgina; Eudora.
Stanley, Lula M.; *Carthage, Mo.*
Stark, Ida Luella; Fall River.
Starrett, Glen; Columbus.
Stelle, Charles W.; Pittsburg.
Stephens, Edith Mae; *Joplin, Mo.*
Stevens, Ida Gertrude; Chanute.
Stevens, Homer P.; Burden.
Steward, Lora Beatrice; Independence.
Stewart, Margaret May; Chanute.
Stewart, Minnie Emma; Devon.
Stillson, Thelma; Galena.
Stillwaugh, James R.; Galena.
Stoft, Arthur Edward; Pittsburg.
Stomp, Helena Margaret; Garnett.
Stone, Eliza May; Cherokee.
Stonecipher, Lillie Louella; Columbus.
Streeter, Ethel Berle; Fort Scott.
Strother, Luetta May; Fort Scott.
Stuart, Wilma Lee; Pittsburg.
Sullivan, Fern Lucille; Oswego.
Sullivan, Lucille Margaret; Erie.
Sutton, Emma May; *Oronogo, Mo.*
Swain, Viola May; Iola.
Swearingen, Alba; Independence.
Swearingen, Ruth; Independence.
Sweatt, George Alexander; Humboldt.
Swigart, Leta Oral; Girard.
Swope, Helen Paige; Morehead.
Tanksley, Margaret Jane; Elk City.
Tanner, Ethel Aurora; Cherryvale.
Tanquary, Jennie Esther; Arma.
Taylor, Ellis Reuben; Frontenac.
Taylor, Russell L.; Iola.
Taylor, Ted R.; Arcadia.
Tedlock, Thurman E.; Columbus.
Teeple, Buford L.; Walnut.
Thompson, Effie Bryant; *Tulsa, Okla.*
Thompson, Lenore June; Pittsburg.
Thorne, Flossie Pearl; *Nash, Okla.*
Thornton, Edith Alice; *Fame, Okla.*
Thornton, Lulu; *Nevada, Mo.*
Thorpe, Lucille Katherine; *Nevada, Mo.*
Thorpe, Mary Elizabeth; *Nevada, Mo.*
Tincher, Leona; Fort Scott.
Tipton, Laura Irenah; Morehead.
Tipton, Ruth Louise; Girard.
Todd, Marie Inez; Independence.
Tolar, Sara Alyce; Kingman.
Torrance, Mary; Independence.
Towers, Audria Bernice; *Drexel, Mo.*
Townsend, Lena E.; Girard.
Toy, Claire Allene; Cherryvale.
Tracey, Hazel Fern; Stillwell.
Traylor, Flora Elizabeth; McCune.
Trice, Daisy Mae; *Fort Smith, Ark.*
Trogdon, Alta; Arcadia.
Trueblood, Julia Mae; Yates Center.
Turley, Goldie V.; Angola.
Turner, Jessie Myrtle; Redfield.
Turrill, Alma Ruth; Weir.
Tyson, Pearl M.; Oswego.
Upchurch, Margaret Mary; Galena.
Upham, Harriet Rebecca; Boicourt.
Utley, Claude Jacob; Chetopa.
Van Dusen, Ida May; Baxter Springs.
Vawter, James Penhill; *Joplin, Mo.*
Vehlow, Esther Christena; Walnut.
Vehlow, Fred Ronald; Walnut.
Vermilya, Lydia Faye; Attica.
Vessadina, Anita Gennie; Mulberry.
Vieweg, Novallia Blanche; Scammon.
Wackerle, Esther May; Chetopa.
Wagaman, Frank; Syracuse.
Wakefield, Nellie G.; *Carthage, Mo.*
Walker, Clarence B.; Chetopa.
Walker, Margarette Dott; Mound City.
Walker, Margaret Frances; *Siloam Springs, Ark.*
Walker, Nellie Vivian; Pittsburg.
Walker, Maurice Andrew; Columbus.
Walsh, Mary; Weir.
Walters, Nellie Myrtle; Iola.
Waltz, William Benjamin; Pittsburg.
Wanasek, Beatrice; Holyrood.
Watson, Christina Judea; Weir.
Waughtal, Cecille Clara; Galena.
Webb, Gladys Marveline; Girard.
Webb, Simeon; Mulberry.
Weir, Bertie Thelma; Pittsburg.
Weir, Evanelia; Pittsburg.
Welch, Gladys Gammage; Hiattville.
Welch, Mary Ellen; Wichita.
Wellman, Loren E.; Galena.
Wells, Lilie Mae; Delia.
Welton, Della; Princeton.
Wesley, Mae; Great Bend.
Westoff, Olive Marie; Walnut.
Westover, Mrs. Carrie Choate; *Joplin, Mo.*
Wheeler, Imogene Bertha; Chanute.
Whelen, James Harold; Erie.
White, Blanche; *Joplin, Mo.*
White, Helen Templeton; Weir.
White, Ruth A.; Stark.
Whitehead, Esther Eileen; Girard.
Whitehead, James; Carona.
Whiteman, Ida Pearl; Atlanta.
Whiteside, Alpha Vesta; Girard.
Whitesitt, R. K.; *Plainville, Ind.*
Whitney, Juanita Agnes; Cherokee.
Wickware, John Hale; Pittsburg.
Wickware, Rose Rogers; Pittsburg.
Wicoff, Leo Charles; Hutchinson.
Wilkins, Cleda Catherine; Mound Valley.
Wilkinson, Bernice; Weir.
Willard, Paul Malone; Arcadia.
Willey, Iva Alice; *Broken Arrow, Okla.*
Williams, Frank Ilesley; *Seguin, Tex.*
Williams, Gladys M.; Altamont.
Williams, Ida Overton; Holton.
Williams, Jennie; Arcadia.
Williams, Nellie; Chetopa.
Williams, Velda Mae; Girard.
Williams, Wilma; Pittsburg.
Williamson, Mrs. Nell M.; *Welch, Okla.*

College Freshmen—*Concluded.*

Wilson, Edith Josephine; Rush Center.
Wilson, Mrs. Luna; Pittsburg.
Wilson, Olive Henry; Sedan.
Wilson, Ruby; Pittsburg.
Wilson, Vera Julia; Altoona.
Wing, Vera Alice; Columbus.
Winn, Beulah Olive; Coffeyville.
Wise, Laura Dale; Louisburg.
Wise, Verna Belle; Louisburg.
Witter, Clyde F.; *Asbury, Mo.*
Wogahn, Betha Albertha; Fort Scott.
Wood, Marie E.; Fort Scott.
Wood, Ruth Hazel; Fort Scott.
Woodcock, Hazel Taletha; Bronson.
Woolery, Ethelyn Arzita; Olathe.
Worley, Ednah Angeline; Longton.
Worthington, Mrs. Alta Butcher; Galena.
Wrestler, Ferna Eldoona; Walnut.
Wright, Naomi; Pittsburg.
Wulf, Emma Anne; Barlett.
Wyman, Euladell; Pittsburg.
Wyman, Virginia Lavon; Pittsburg.
Yartz, Christine Mayme; Frontenac.
Yates, Gladys; Pittsburg.
York, R. A.; Fort Scott.
York, Verlie; *Vinita, Okla.*
Young, Edna Josephine; Chicopee.
Zickgraf, Mrs. Mary L.; Girard.
Ziegler, Helen Louise; Pleasanton.
Zimmerman, Gladys Lucile; Olathe.

College Specials.

Allman, Goldie Belle; *Pineville, Mo.*
Allman, Lela May; *Pineville, Mo.*
Amos, Helen; *Smithfield, Mo.*
Angell, Ethel Mae; Mineral.
Arndt, Mrs. Margaret Annie; *Liberal, Mo.*
Ash, John Louis; Pittsburg.
Ashwood, Wave Shaw; *Inola, Okla.*
Averill, Claude F.; Rantoul.
Barner, Albert Floyd; *Pineville, Mo.*
Barnes, Sadie; *Joplin, Mo.*
Bass, Sadie; Fort Scott.
Bean, Mrs. Grace L.; Pittsburg.
Beaver, Clara Katharine; Sabetha.
Beaver, Mac; Fort Scott.
Bennett, Doris Marie; Scammon.
Besse, Mrs. Ethel; Pittsburg.
Blue, Sallie Inskeep; Valley Falls.
Bogle, Olive; Pittsburg.
Bortz, Ralph Marna; Pittsburg.
Bradley, Anna; *Pawhuska, Okla.*
Bramlette, Mrs. Hattie Rowena; Columbus.
Branson, Elsie Edith; Scammon.
Brown, Anna J.; Fort Scott.
Brown, Anna R.; Pittsburg.
Brown, Ella; Kansas City.
Brubacker, Pearl Katherine; Gardner.
Bryan, Sister M. Bernadette; Paola.
Butts, Lula; Mound Valley.
Casey, Jessie Myrtle; McCune.
Cavanagh, Laura Francesca; Cherokee.
Chenoweth, Etta Belle; Mapleton.
Clavin, Maude E.; Olathe.
Clodfelter, Susan J.; Hutchinson.
Cochran, Riley M.; *Bethany, Mo.*
Coleman, A. G.; Sterling.
Collins, Mrs. Ada Marcella; *Joplin, Mo.*
Corbet, Clarence Martin; Highland.
Dinneen, George B.; Pittsburg.
Downing, Mabel Evelyn; *Joplin, Mo.*
Elliff, Miles Anthony; *Pineville, Mo.*
Elsworth, Jennie Maude; Pleasanton.
Emery, Mrs. Ruby Nance; Pittsburg.
Ewan, Wilbur Bert; Fontana.
Feasel, Chester Cecil; Richmond.
Finimore, Harry L.; Pittsburg.
Fisher, Mabel; Weir.
Fitzpatrick, Sister M. Ignatius; Miami.
Fox, Doris Mae; Mulberry.
Gaffron, Arnold W.; *Oklahoma City, Okla.*
Gildart, Rita Claire; Neodesha.
Gingrich, Emilie; Wellsville.
Gooch, Mrs. Myrtle Gay; Pittsburg.
Gordon, Winnie Gertrude; Paola.
Greve, Blanche Edith; Earlton.
Haffa, Milton Clarence; Merriam.
Hale, Emmett M.; *Pryor, Okla.*
Hamilton, Mrs. Laura Hoover; Partridge.
Hare, May; Fort Scott.
Hargrove, Mabel Ellen; *Dederick, Mo.*
Hays, James William; Pleasanton.
Hendricks, Mayme E.; *Bolivar, Mo.*
Hess, Kathleen G.; Hutchinson.
Hinkle, Ruth; Mineral.
Houston, Grace M.; Garnett.
Huff, Mrs. Mary Pearl; Galena.
Huss, Elnora Marie; Pawnee Station.
Jackson, Marie; Kansas City.
James, Harold Tennyson; Pittsburg.
Jerome, Sister; Paola.
John, William Ellis; *Joplin, Mo.*
Jones, Oliver E.; Leavenworth.
Kelley, Annie; Pittsburg.
Killough, Mary E.; Pittsburg.
Knight, Lewis G.; *Joplin, Mo.*
Lake, Prosper D.; Medicine Lodge.
Leturgez Josephine; Mineral.
Lewis, Ary Lillie; Cherryvale.
Linton, Ida May; *Joplin. Mo.*
Londberger, Katharine; Parsons.
Lucas, Alma Joann; Pittsburg.
McBride, Cornelia; Columbus.
McCray, Claude Richard; Pittsburg.
McLatchey, M. Winona; Pittsburg.
McNally, James E.; *Joplin, Mo.*
McNally, Mary; Coffeyville.
McSweeney, Sister M. Cornelia; Pittsburg.
Mack, Ruth Irene; Erie.
Malone, Eva; Pittsburg.
Marner, Niargua Woodward; Hutchinson.
Martin, Mrs. Edna Smith; *Joplin, Mo.*
Martin, Mrs. Mittie R.; Chanute.
Metcalf, Pattie Elsa; Colony.
Miles, Edna Williams; Lenexa.
Miles, Etta; Lenexa.
Moore, Dollie; Fort Scott.
Moore, Mattie; Parsons.
Morgan, L. V.; *Joplin, Mo.*
Murphy, Mrs. Ethel Christine Christianson; Mineral.
Nation, Dora Frances; Erie.
Neal, Julia H.; Parsons.
Nelson, Glen Oscar; Arcadia.
Nelson, Mrs. Sarah H.; Topeka.
Parker, Mildred D.; Galena.
Paslay, Harland L.; Frontenac.
Prescott, Elizabeth; Mound Valley.
Pressler, Katherine; Fort Scott.
Raymond, Oliver Perry; Pittsburg.
Richards, Nettie; *Richards, Mo.*
Reibe, Sophia; Walnut.
Riley, Mary Altha; Crenola.
Riordan, Margaret Frances; Pittsburg.
Roscoe, Rachael C.; Pittsburg.
Ross, Mrs. George C.; Hutchinson.
Roberson, Harriet Elden; *Carthage, Mo.*
Russell, Peter; Mineral.
Schasteen, Mrs. J. H.; Pittsburg.
Scott, Coral Frances; Pittsburg.
Scranton, Arthur; *Nebo, Ill.*
Severns, Effie Clarie; *Milo, Mo.*

College Specials—*Concluded*.

Sims, Mrs. Mattie L.; Edgerton.
Sister, M. Ethelbert; St. Paul.
Smith, Arthur; *Pineville, Mo.*
Smith, George W.; Neosho Falls.
Smith, Lila M.; Olathe.
Smith, Minnie Lee; *Pineville, Mo.*
Smith, Nora Edith; Parsons.
Snyder, Emma Warren; Pittsburg.
Snyder, Evelyn; Lenexa.
Spaid, Charles Lewis; *Joplin, Mo.*
Sperry, Margaret; Ocheltree.
Stank, Ida Louella; Benton.
Stimmel, Irwin; Mullinville.
Sullivan, Sister M. Calista; Pittsburg.
Summerfield, Lena R.; *Joplin, Mo.*
Tanner, Homer; Valeda.
Taylor, E. E.; Ottawa.
Taylor, Ruby E.; Fort Scott.
Thomas, Ucinda Reynolds; Mulberry.
Thompson, Mabel E.; Dennis.
Thudium, M. D.; Galena.
Todd, Edith Inthe; Coffeyville.
Torbett, Elizabeth Veronica; Arma.
Tripp, Mrs. Eleanor Leona; Fort Scott.
Tullis, Ella; Olathe.
Tutt, Charles G.; Oswego.
Tyler, Carl E.; Arcadia.
Venable, Stella Faye; Mulberry.
Wade, Isabelle; *Joplin, Mo.*
Watkins, Lawrence George; Pittsburg.
Welch, Lena; Chanute.
Whaley, Lois; Pittsburg.
Whaley, Newton Phillip; *Afton, Okla.*
White, Bonnie Belle; *Joplin, Mo.*
White, Minnie V.; Elk Falls.
Whittaker, Warren Green; Coffeyville.
Williams, Elsie; *Tradlena, N. M.*
Williamson, Sherman Henry; Oskaloosa.
Wilson, Mrs. Hattie E.; Pittsburg.
Winters, Wilda Wauneta; Mineral.
Wolf, Mrs. Olga Margaret; Pittsburg.
Wyman, Audria; Pittsburg.
Young, Hattie Watterson; *Joplin, Mo.*
Young, Mrs. Lula M.; Walnut.
Zimmerman, Ruby; Hutchinson.

Students in Department of Music.

Akins, Lavetta; Pittsburg.
Albertson, Kate Elizabeth; Pittsburg.
Allen, Helen Inez; Pittsburg.
Allman, Marie; Columbus.
Amelia, Sister; Pittsburg.
Angell, Rowena Lavon; Pittsburg.
Baker, Bessie M.; Oswego.
Baker, Harriet M.; Oswego.
Baker, Martha G.; Pittsburg.
Barker, Edwin; Pittsburg.
Barnes, William; Weir.
Barnthouse, Ethel Angell; Pittsburg.
Barrett, Lovejoy; Parsons.
Beaseley, Lynette; Pittsburg.
Bell, Cleo; Pittsburg.
Benefield, James Hope; Coffeyville.
Bennett, Clelia Alice; Pittsburg.
Bennett, Esther; Pittsburg.
Benton, Bernice; Pittsburg.
Bertino, Agnes; Mulberry.
Bevans, Frank; Pittsburg.
Boice, Bessie Varian; Pittsburg.
Bolinger, Hazel; Redfield.
Bollinger, Marie; Mound Valley.
Bowker, Vivieene Eileen; Pittsburg.
Brandenburg, Lucile Eleanor;
  Des Moines, Iowa.
Branham, Sarah; Canton.
Brenner, Mary Ellen; Cherokee.
Broyles, Magretta; Pittsburg.
Burkholder, Pearl M.; Coffeyville.
Butler, Lawrence; Tyro.
Caffey, Elizabeth; Pittsburg.
Calhoun, Maurine; Pittsburg.
Callery, Anabel; Pittsburg.
Cann, Winifred; Frontenac.
Carey, Ellen; Pittsburg.
Carlton, Ann Helen; Pittsburg.
Carrier, Emile N.; Frontenac.
Carter, Cecile Wanda; Pittsburg.
Carter, Helena Esther; Pittsburg.
Cass, Mrs. Edith L.; Moran.
Chadsey, Ruth; Cherokee.
Chitwood, Josephine Lucille;
  Carl Junction, Mo.
Christmore, Esther Claire; Edna.
Church, Mary; Pittsburg.
Claiborne, Mrs. R. O.; Pittsburg.
Clemens, Calvin; Pittsburg.
Cloyd, Mary Edith; Pittsburg.
Coleman, William Harold; *Asbury, Mo.*
Combs, Helen Adele; Pittsburg.
Comfort, Sylvia; *Westville, Okla.*
[illegible], Vena Carrie; Pittsburg.
Cook, Van L.; Mulberry.
Copher, Nellie Doris; *Fort Worth, Tex.*
Cornelius, Elizabeth; Pittsburg.
Cotter, Beatrice; Pittsburg.
Coulter, Celia I.; Pittsburg.
Crane, Virgil; Pittsburg.
Dale, Olivia Lanyon; *Carthage, Mo.*
Daniel, Helen Eloise; *Catlettsburg, Ky.*
Davies, Jane; Pittsburg.
Davis, Velma; Pittsburg.
Davis, Thelma; Pittsburg.
Dean, Elsie; Nickerson.
Dellinger, Alice Hope; Pittsburg.
Dellinger, Mary C.; Pittsburg.
Dellinger, Ralph Alexander; Pittsburg.
Dickey, Helen; Pittsburg.
Dolson, Kathleen; McCune.
Egger, Lucy Juliene; West Mineral.
Eisenhart, Vera; Pittsburg.
Elton, Garnet; *Greenfield, Mo.*
Falls, Gwendolyn; Altoona.
Falls, Olive; Altoona.
Fern, Mary Elizabeth; Scammon.
Foresman, Mary Margaret; Pittsburg.
Foster, Lena Reah; *Joplin, Mo.*
Foster, Rowland; Walnut.
Fowler, Rowena Juanita; Iola.
Geeder, Katherine Gibson; Pittsburg.
George, Dorothy; Girard.
Gerkin, Georgene Leigh; Girard.
Gibson, Helen; Pittsburg.
Gieselman, Eunice Claire; Pittsburg.
Glick, Katharyn; Pittsburg.
Goodhall, Charles A.; *Winslow, Ariz.*
Goodrum, Perva Margaret; Pittsburg.
Gorrell, Juanita; Pittsburg.
Gossett, Serena; Pittsburg.
Gould, Mary Ellen; *Chillicothe, Mo.*
Gracey, Helen; Pittsburg.
Graham, Staneart; Pittsburg.
Grandle, Harvey Marion; Pittsburg.
[illegible], [illegible] Bernard; Pittsburg.
Gudgen, Blanche Opal; Pittsburg.
Guthridge, Wallace Hunter; Pittsburg.
Guntle, Grace Mildred; Oswego.
Guthrie, Cecil; Mulberry.
Gyles, Adam Maude; Pittsburg.
Hammel, Mildred Alice; Pittsburg.
Hargiss, Vetra Virginia; Pittsburg.
Heaton, Helen; Pittsburg.

DEPARTMENT OF MUSIC—*Concluded.*

Henderson, Thelma; Frontenac.
Herron, Mary Frances; Sterling.
Hisle, Jessie Maurene; Pittsburg.
Hobbs, Alpha Herrick; Weir.
Hobson, Marcet; Pittsburg.
Hobson, Ida Ruth; Pittsburg.
Hobson, Lorna; Pittsburg.
Horton, Mildred; Pittsburg.
House, Alma; Pittsburg.
Huffman, Clarice D.; Hepler.
Humphres, Lucile Daisy; Kincaid.
Husted, Orval Chester; Horton.
Hutchman, Ruth L.; Pittsburg.
Ireland, Ruth; Fort Scott.
Jackson, Alda; Pittsburg.
James, Allene Falls; Altoona.
Jewell, Gladys; Mt. Hope.
Johnson, Kathryn I.; Pittsburg.
Joiner, Ruth Victoria; Columbus.
Jones, J. Lawrence; Pittsburg.
Jones, Leona Grace; McPherson.
Jones, Mary Jane; Independence.
Jones, Paul S.; Pittsburg.
Jones, Pauline S.; Pittsburg.
Jones, Raymond; Pittsburg.
Jones, Ruth; Pittsburg.
Kelso, Mrs. C. P.; Pittsburg.
Kerr, Ferol Peake; Pittsburg.
King, Edith Julia; Pittsburg.
Kincaid, Cecil; Pittsburg.
Lesniak, Helen Elizabeth; Frontenac.
Leyburn, Ruby Louise; Weir.
Lough, Delma Rose; Pittsburg.
Lough, Velma Ree; Pittsburg.
Lough, Vivian Beatrice; Pittsburg.
Lucas, Alma Joann; Pittsburg.
McCleary, Hazel; Pittsburg.
McCray, Charles A.; Parsons.
McCray, Claude Richard; Pittsburg.
McDonald, Mary Katherine; Pittsburg.
McGhie, Mildred Pauline; Columbus.
McGonigle, Zoe; Pittsburg.
Mangrum, Margaret Elizabeth; Pittsburg.
Margrave, Ruth; Pittsburg.
Marshall, Mabel Sloan; Colony.
Marshall, Mina; Pittsburg.
Mathes, Fern Cleone; Pittsburg.
Mawson, Martha; Pittsburg.
Mayberry, Edith Hailey; Pittsburg.
Mead, Lorene; Pittsburg.
Melvin, Doris; Pittsburg.
Mendenhall, Ethelyn; Pittsburg.
Menichetti, Vivian Patton; Frontenac.
Metcalf, Pattie Elsa; Colony.
Milleson, Sybil Lee; Pittsburg.
Mitchell, Margaret O.; Pittsburg.
Mitchell, Thelma Lois; Pittsburg.
Moherman, Laura Fox B. C.; Wellsville.
Montee, Benjamin Mohan; Pittsburg.
Montee, Mary Elizabeth; Pittsburg.
Morgan, Leona; Arma.
Mullikin, Ida Caroline; Cherryvale.
Murphy, Pearl; Pittsburg.
Myers, Hattie Esther; Cherokee.
Nation, Milton Wallace; Erie.
Nesch, Betty; Pittsburg.
Newman, Alma; Pittsburg.
Newman, Clara; Pittsburg.
Nichols, Merle; Pittsburg.
Nipple, Florence; Mulberry.
O'Connor, Bonnie; Pittsburg.
O'Connor, Loretta; Pittsburg.
Oldham, Mary Elizabeth; Pittsburg.
O'Neall, Beatrice Carolton; *Carthage, Mo.*
Ott, Mary Marcella; Pittsburg.
Owen, Edna Anna; *Carl Junction, Mo.*
Palmer, Maurine; Pittsburg.
Pancost, Gladys Ava; Galva.
Perrine, Vivian Pauline; *Siloam Springs, Ark.*
Phillips, Edith; Girard.
Plagens, Hertha; Pittsburg.
Plumb, Mrs. Walter; Pittsburg.
Pope, Anne Cecelia; Mulberry.
Potter, Martha; Pittsburg.
Potter, Pauline Lavon; Pittsburg.
Potter, Veva; Pittsburg.
Pratt, Mrs. C. W.; Pittsburg.
Reardon, Allie Ruth; Liberty.
Reid, Irene Whitmore; Pittsburg.
Ridgeway, Nema; Edna.
Robins, Lina; Pittsburg.
Roby, Darlene; Pittsburg.
Rogers, Martha; Pittsburg.
Rumbley, Olive M.; Chanute.
Rush, Margaret Abby; Girard.
Russell, Mabel Alice E.; Cherokee.
Sauer, Gertrude Pauline; Girard.
Schiefelbein, Minnie; Pittsburg.
Schwab, Hester Ellen; Pittsburg.
Scott, Eloise Margaret; Pittsburg.
Scott, Wilma; Pittsburg.
Shafer, Dorothy; Pittsburg.
Sheldon, Donald R.; Altamont.
Sighel, Tracy Josephine; Pittsburg.
Skourup, Mildred; Pittsburg.
Small, Vivian C.; Ford.
Smith, Mrs. Charles S.; Pittsburg.
Smith, Florence; Pittsburg.
Smith, Opal; Pittsburg.
Sperry, Margaret; Ocheltree.
Spragg, Thelma Marcella; Pittsburg.
Spriggs, Hazel Eunice; McCune.
Stamm, Gertrude Alene; Pittsburg.
Stamm, Ruth; Pittsburg.
Stevison, Vorice; Pittsburg.
Sutton, David; Girard.
Taber, Mary Iris; Pittsburg.
Tanner, Lorene; Pittsburg.
Taylor, Ellis Reuben; Frontenac.
Taylor, Katherine; Pittsburg.
Teeple, Buford L.; Walnut.
Telfer, Margaret Arnott; Pittsburg.
Telfer, Wilma Gertrude; Pittsburg.
Thayer, Joseph; Pittsburg.
Thomas, Opal; Pittsburg.
Tilton, Ruth Elizabeth; Edna.
Utley, Claude Jacob; Chetopa.
Wager, Mrs. Margaret Rose; Pittsburg.
Walters, Besse; Scammon.
Waltz, Geneva Madge; Pittsburg.
Weede, Dorothy; Pittsburg.
Weede, Richard Garfield; Pittsburg.
West, Mrs. C. A.; Pittsburg.
Whittington, Nadine; Pittsburg.
Williams, Bertha M.; Pittsburg.
Williams, Helena Cecila; Pittsburg.
Wilson, Dorothy; Pittsburg.
Wilson, Mrs. Luna May; Pittsburg.
Wimp, Martha; Pittsburg.
Witter, Clyde E.; *Asbury, Mo.*
Wright, Pluma Lou; Pittsburg.

Senior Preparatory Department.

SENIORS.

Blackett, Faye Ruth; Girard.
Boone, Ralph Wesley; Colony.
Bowman, Pearl; Parsons.
Brandenburg, Harold Penfield; Pittsburg.
Bunney, Helen; Pittsburg.
Carlton, Laura Etta; Edna.
Crall, Earle Henry; Parsons.
Cronin, Ruth Mary; Pittsburg.
Dolson, Kathreen; McCune.
Easley, Alda; Scott City.
Fast, Dixie E.; *Liberal, Mo.*
Fox, Beatrice Allie; Mulberry.
Hamilton, Myrtle May; Mulberry.
Hope, Mary Beth; Pittsburg.
Houston, Cecil Decatur; *Carl Junction, Mo.*
Houston, Grace M.; Garnett.
Hull, Frances Purla; Pittsburg.
Iserman, Ruth Lillian; Pittsburg.
Israel, Constance; Farlington.
Janes, Hazel Lee; Farlington.
Jones, Earl Robert; Pittsburg.
Justice, Mildred Claire; Chetopa.
Kaley, Helen Mae; Fulton.
Killough, Elsie Louise; Pittsburg.
Lance, Mary Alice; Pittsburg.
Lewis, Victor John; Opolis.
McFarland, Ivan Cooper; *Liberal, Mo.*
Marsh, Edith Katherine; Pittsburg.
More, Opal Mildred; Pittsburg.
Mullani, William; Weir.
O'Donald, Rose Mary; Frontenac.
Osterman, Hulda; Pittsburg.
Pearson, Bessie Eleanor; Columbus.
Reid, Mary; Scammon.
Robb, Metta; El Dorado.
Robinson, Blanche Irene; Pittsburg.
Rogers, Jim; Pittsburg.
Rondelli, Joe; Pittsburg.
Roseboom, Florence; Girard.
Schneider, Jewell Mildred; Pittsburg.
Schwinn, George Jacob; Weir.
Scott, Julia Violet; Parsons.
Smith, Lo Louise; Pittsburg.
Smith, Opal L.; Pittsburg.
Steele, James M.; Arcadia.
Sturgis, Ralph Hall; Kanopolis.
Walker, Florinne Marcella; Pittsburg.
Walters, Clyde E.; Pittsburg.
Ware, Seth; Pittsburg.
Washington, Coneva Ovesta; Weir.
Webb, Mabel May; Pittsburg.
White, Mary J.; Kimball.
Wilson, Gay Lynd; Opolis.
Wilson, John Benjamin; Opolis.
Wingart, Josephine; Topeka.
Woodbury, Robert Arthur; Pittsburg.
Young, Ester Rose; Pittsburg.

JUNIORS.

Akins, Lavetta Pauline; Pittsburg.
Alexander, William; Pittsburg.
Armstrong, Lucy June; Franklin.
Ball, Charles Morton; Coffeyville.
Bare, Minnie Fern; *McAlester, Okla.*
Barnett, Mamie Penke; Pittsburg.
Bell, Evajean; Arcadia.
Benton, Hazel Ann Madeline; Pittsburg.
Bertino, Agnes; Mulberry.
Billington, Pauline Bertha; Pittsburg.
Bourland, John Albert; Columbus.
Brower, Esther Marguerite; Pittsburg.
Brown, Samuel Frederick; Independence.
Cavanaugh, William B.; Pittsburg.
Clark, Josephine Ruth; Chetopa.
Cogswell, William T.; Pittsburg.
Coleman, William Harold; *Asbury, Mo.*
Comfort, Kenneth Lee; *Westville, Okla.*
Coonrod, Ava Marie; Arcadia.
Cowden, Howard Brownell; Pittsburg.
Crihfield, Opal; Geneseo.
Cropper, Thelma Fern; Pittsburg.
Cunningham, Charles Raymond; Englevale.
Denny, Cecil Armstrong, Pittsburg.
Downing, John; Pittsburg.
Doyle, Sadie A.; McCune.
Elsing, Martha; Pittsburg.
Fox, Doris Mae; Mulberry.
Fritts, Margaret; Mulberry.
Fulkerson, Irma; Pittsburg.
Garnett, Eva; Topeka.
Geary, Mae; Pittsburg.
Gerkin, Georgene Leigh; Girard.
Gieselman, Eunice Claire; Pittsburg.
Gilbreath, Jim; Pittsburg.
Gillenwaters, J. Marie; Pittsburg.
Gillin, Hugh Clair; Pittsburg.
Greer, Agnes Ophelia; Cherokee.
Hinman, Marie; Opolis.
Hisey, Charles; Mulberry.
Holland, Elizabeth Blanche; *Liberal, Mo.*
Hopper, Eva Irena; Arcadia.
Irwin, Ruth; Chanute.
Iserman, Theodore; Pittsburg.
Jewell, Cora Irene; Fulton.
Johnson, Kathryn I.; Pittsburg.
Keller, Sam Lyde; Pittsburg.
Kellogg, Mary Virginia; Pittsburg.
Kincaid, Cecil Walter; Pittsburg.
Laird, Raymond; Baxter Springs.
Laughlin, Rutherford; *Rich Hill, Mo.*
McCabe, Mae Della; McCune.
McClure, Letha Marie; Opolis.
Marrietta, Louisa; West Mineral.
Marsh, Flora Jeannette; Pittsburg.
Mason, Agnes Grace; Fulton.
Matter, Leeman C.; Weir.
Mendenhall, James Edgar; Pittsburg.
Meredith, Bernice; Pittsburg.
Moeller, Myrtle Helen; Earlton.
Montee, Teddie; Pittsburg.
Mooniehan, Mayme Eulabell; Arcadia.
More, Mrs. Nannie Blythe; Pittsburg.
Morrison, Nellie Blanche; Franklin.
Mustard, Josephine Flora; St. Paul.
Owen, Edna Anna; *Carl Junction, Mo.*
Peterson, Hazel Marie; Girard.
Plunkett, Virgil Eric; *Joplin, Mo.*
Raleigh, Johnnie Lee; Pittsburg.
Russell, Lena Louise; Redfield.
Schwab, Charles Francis; Pittsburg.
Scott, Addie Rosella; Weir.
Sells, Dewey Paul; Pittsburg.
Simpson, Alma Roy; *Broken Arrow, Okla.*
Spencer, Kennetth A.; Pittsburg.
Stickle, John; Weir.
Sweeney, Pearl Cecelia; Pittsburg.
Talbot, Leah; Sedan.
Thomas, Opal Marie; Pittsburg.
Turner, Pauline Shelley; Redfield.
Walker, Mary Lorene; Weir.
Waskey, Helen; Pittsburg.
Watson, Dorothy Phyllis; Brazelton.
Williams, Andrew Leo; Pittsburg.
Wilson, Olive Mary; Coffeyville.
Wilson, William; Pittsburg.
Withers, Tressia May; Mulberry.
Woods, Margaret; Pittsburg.

SOPHOMORES.

Allen, Helen Inez; Pittsburg.
Angell, Ethel May; West Mineral.
Bailey, Ruth; Pittsburg.
Baker, John Meredith; Pittsburg.
Baxter, Esther; Pittsburg.
Bennett, Laura Edith; Lawton.
Bevans, Arlie; Pittsburg.
Bevans, Frank; Pittsburg.
Biddle, John P.; Pittsburg.
Biddle, Saidee Margarett; Pittsburg.
Boice, Bessie Varian; Pittsburg.
Bournonville, Everett Lynn; Pittsburg.
Bowen, James Dowling; Pittsburg.
Bringle, Ernest; Oswego.
Broadlick, Charles Thomas; Pittsburg.
Bugbee, Kathryn Mayre; Pittsburg.
Chadsey, Ruth; Cherokee.
Clark, Julia; Monmouth.
Clemons, Bill Lee; Pittsburg.
Cordray, Allegra Vesta; Pittsburg.
Coughenour, Harriett Sarah; Pittsburg.
Covell, Merle Oran; Pittsburg.
Cropper, Agnes Nell; Pittsburg.
Crouch, Lettie Vera; Blue Mound.
Cunningham, Lola Lillian; Pittsburg.
Dean, Myrtle Hazle; Deerfield.
Demmon, Grace Lee; Pittsburg.
Doyle, Mary Vivian; McCune.
Duffy, Katherine; Pittsburg.
Dupree, William; Franklin.
Edwards, Dean Royster; Pittsburg.
Ellis, Fred; *Bronaugh, Mo.*
Elton, Garnet; *Arcola, Mo.*
Everett, Fay; Independence.
Ewbank, Jane Ann; Beulah.
Fedell, Helen Mary; Pittsburg.
Fern, Mary Elizabeth; Scammon.
Ferree, Francis Lillian; Pittsburg.
Fletcher, Ruth Mae; Pittsburg.
Foresman, Thelma Elizabeth; Pittsburg.
Green, Orval Lafayette; Moline.
Guthridge, Wallace Hunter; Pittsburg.
Hackney, John T.; Hallowell.
Hanson, Harry Edwin; Mineral.
Henderlider, Martha; Pittsburg.
Hisle, Jessie Maurene; Pittsburg.
Johnson, Leota Mabelle;
  Carl Junction, Mo.
Johnston, John Wesley; *Mindenmines, Mo.*
Jones, Austin Lenard; Pittsburg.
Knoll, Kathryn; Pittsburg.
Lance, Mabel Fern; Pittsburg.
Lance, Robert; Pittsburg.
Lapworth, Katherine Ann; Pittsburg.
Leonard, Margaret; Mulberry.
Long, Minnie Blanche; *Carl Junction, Mo.*
Lough, Vivian Beatrice; Pittsburg.
McAnnally, Thelma Ada; Arma.
McCue, John Hugh Sullivan; Pittsburg.
Maletz, Vida Hazel; Pittsburg.
Mantooth, Sylvia Arletta; Jefferson.
Marsh, Elizabeth; Pittsburg.
Mayfield, Beulah Vivian; Chetopa.
Mendenhall, Ethelyn; Pittsburg.
Merick, Audrey Myrnice; Pittsburg.
Millikan, Lela Alice; Sedan.
Mordica, Blanche Victorine; Pittsburg.
Mosher, Edythe Pauline; McCune.
Murphy, Joseph Robert; Pittsburg.
Myler, Mabel Viola; Iola.
Nichols, Gladys Louetta; Pittsburg.
Rader, Lillie May; Pittsburg.
Rall, Lavon; Pittsburg.
Reed, Elsie Ida; *Liberal, Mo.*
Reizenstein, Melba; Pittsburg.
Sanderson, Thelma Leona; Pittsburg.
Schneider, Clarence B.; Pittsburg.
Scott, Maude Gazelle; Weir.
Sharp, Vaneta Lee; Pittsburg.
Sighel, Tracy Josephine; Pittsburg.
Simmons, Bernice Marie; *Ianthe, Mo.*
Simpson, Gail; Pittsburg.
Smith, Charlotte; Pittsburg.
Star, Jessie Elizabeth; Pittsburg.
Steele, Mary C.; Pittsburg.
Steffens, Albert Williams; Pittsburg.
Sutton, Fred George; Weir.
Taylor, Mary Elizabeth; Pittsburg.
Thomas, Clarence Earl; Garland.
Trimbel, Debbie Myrtle; Parsons.
Trout, George G.; Pittsburg.
Trout, Ralph Haddon; Pittsburg.
Vorhies, Theodore Melvin; Pittsburg.
Ware, Wesley Miles; Pittsburg.
Weir, Goldie May; Pittsburg.
Weir, Oma Ethel; Pittsburg.
Wells, Minnie Ellen; Cedar Vale.
Wilson, LaVon Lee; Pittsburg.
Wilson, Ruth Marguritte; Coffeyville.

THIRD YEAR, NINTH GRADE.

Allan, George David; Pittsburg.
Anderson, Anna Irene; Farlington.
Barnett, Myrtle Mary; Pittsburg.
Barrett, Lovejoy Pauline; Parsons.
Benton, Roberta Irene; Pittsburg.
Bitner, Arthur Scott; Pittsburg.
Bork, Eddie Adam; Pittsburg.
Branham, William Blair; Pittsburg.
Brown, Florence; Pittsburg.
Collie, James Martin; Pittsburg.
Conyers, Loraine Harry; Pittsburg.
Cottingim, Katie; Parsons.
Crelly, Margaret Ellen; Pittsburg.
Dellinger, Alice Hope; Pittsburg.
Dorsey, Mary Viola; Weir.
Dunlap, Mary Elizabeth; Cherokee.
Edwards, James Francis; Pittsburg.
Farmer, Alta May; Arcadia.
Faulkner, Zelbo Z.; Pittsburg.
Genta, Nicola; West Mineral.
Glick, John William; Pittsburg.
Gregory, Wayland; Pittsburg.
Gudgen, Prentice Everett; Pittsburg.
Hefton, Cecil; Pittsburg.
Heilman, Georgia May; Opolis.
Heilman, Minnie Gertrude; Opolis.
Hobson, Ida Ruth; Pittsburg.
Holland, Gertrude; *Liberal, Mo.*
Hooper, Frederick Homer; Pittsburg.
Hostutler, Hoyt; Pittsburg.
Ingram, Dona Alice; Arcadia.
Ingram, Edna Myrtle; Arcadia.
Jones, Blanche Belle; Pittsburg.
Jones, Floria Mae; Pittsburg.
McConaha, Glenn Roland; Pittsburg.
McDonald, John Lewis Joseph; Pittsburg.
Marvin, Nellie Leon; *Mindenmines, Mo.*
Matthews, Florence Marie; Pittsburg.
Merrick, Pearl Dale; Coffeyville.
Millard, Jess Isaac; Pittsburg.
Moberg, Jack Arthur; Pittsburg.
Oertle, Edith Evelyn; Opolis.
Pence, Gladys May; Pittsburg.
Robinson, Gertrude Fern; Pittsburg.
Russell, Pete; Mineral.
Schneider, Jewell; *Asbury, Mo.*
Scribner, Edna; Chanute.
Shafer, Dorothy Jane; Pittsburg.

NINTH GRADE—*Concluded.*

Shook, Veronica Margaret; Walnut.
Shriver, Mary Evangeline; Pittsburg.
Smith, Rolland Levelle; Bunkerhill.
Spencer, Earl Anderson; Pittsburg.
Spencer, Galen John; Pittsburg.
Steele, Ellen G.; Pittsburg.
Stephan, Anna Francies; Walnut.
Thomas, Clarence Earl; Garland.
Uhles, Elsie Cecile; Pittsburg.
VanBuren, Evelyn; Brazelton.
Vaughn, Arthur Charles; Weir.
Venable, Stella Faye; Mulberry.
Walters, Elsie May; Pittsburg.
Westhoff, Mary Ellen; Brazelton.
White, Wesley Lee; Pittsburg.
Whitesitt, Ermal Kennedy; Pittsburg.
Wilkerson, Helen Ople; Parsons.
Williams, Bertha M.; Pittsburg.
Wilson, Fern Eva; Earleton.

SECOND YEAR, EIGHTH GRADE.

Alliet, Henry Adolph; Pittsburg.
Baxter, Georgette; Pittsburg.
Bennett, Clelia Alice; Pittsburg.
Biddle, Martha; Pittsburg.
Bishop, Steven Darrell; Pittsburg.
Bowers, John Alven; Pittsburg.
Butler, Lawrence Eugene; Tyro.
Byran, Dorothy; Pittsburg.
Church, Grace; Pittsburg.
Dailey, John E.; Pittsburg.
Hull, Richard Lauren; Pittsburg.
Jackson, Merle Francil; Pittsburg.
Jessup, Martin; Pittsburg.
Jones, Ruth Gibson; Pittsburg.
Lough, Delma Rose; Pittsburg.
Lough, Velma Ree; Pittsburg.
Markle, Lloyd Francis; Pittsburg.
Marsh, Richard Riley; Pittsburg.
Millard, Hubert; Pittsburg.
Pellegrino, Josephine; Pittsburg.
Richards, Merle Ralph; Pittsburg.
Rogers, Martha; Pittsburg.
Schasteen, Bessie; Pittsburg.
Scott, Eloise Margaret; Pittsburg.
Seeley, Warren Alfred; Pittsburg.
Taylor, Katherine; Pittsburg.
Trout, Harold Augustus; Pittsburg.
Wyman, Carl Kennedy; Pittsburg.

FIRST YEAR, SEVENTH GRADE.

Baker, George Clifford; Pittsburg.
Benton, Bernice Velda; Pittsburg.
Billington, Gertrude Velma; Pittsburg.
Bowers, Garvey Bruce; Pittsburg.
Brown, Helen Margaret; Pittsburg.
Carlson, Bernard Frederick; Pittsburg.
Chambliss, Marion; Pittsburg.
Dellinger, Ralph Alexander; Pittsburg.
Deruy, Norvelle Randell; Pittsburg.
Dickey, Margaret Maurine; Pittsburg.
Hobbs, Alberta Herrick; McCune.
Hoffman, John; Pittsburg.
Hooper, Shirley Nan; Pittsburg.
Jackson, Alda Mae; Pittsburg.
Jessup, Marion; Pittsburg.
Mead, Emily Lorene; Pittsburg.
Mendenhall, Paul Harold; Pittsburg.
Merritt, Lafayette; Pittsburg.
Millard, Lucille; Pittsburg.
Nichols, Dorothy Emma; Pittsburg.
Rogers, Fred Cave; Pittsburg.
Shafer, Robert Kettler; Pittsburg.
Shaw, Herbert C.; Pittsburg.
Sherwood, Alice Lavon; Pittsburg.
Simpson, Arthur Clyde; Pittsburg.
Smith, Sidney Joseph; Pittsburg.
Walker, Merle Delbert; Pittsburg.

Training School.

Aubert, Helen Chleriese; Pittsburg.
Baker, Emeric; Pittsburg.
Barani, Lorene; Pittsburg.
Barani, Rollie; Pittsburg.
Basham, Ernest; Pittsburg.
Bean, George; Pittsburg.
Bean, Mary; Pittsburg.
Beasley, David; Pittsburg.
Beasley, Lynette; Pittsburg.
Beasley, Warren; Pittsburg.
Beiser, Jay; Pittsburg.
Benton, Bernice; Pittsburg.
Benton, Thomas; Pittsburg.
Berian, Lorene; Pittsburg.
Berry, Pauline; Pittsburg.
Biddle, Elizabeth; Pittsburg.
Biddle, Louise; Pittsburg.
Biddle, Roger; Pittsburg.
Bidderman, Eugene; Pittsburg.
Bitner, Robert; Pittsburg.
Block, Nadine; Pittsburg.
Brandenburg, Helen; Pittsburg.
Brandenburg, William; Pittsburg.
Branham, Sarah; Pittsburg.
Briggs, Lucille; Pittsburg.
Brown, Helen; Pittsburg.
Caffey, Elizabeth; Pittsburg.
Callery, Anabel; Pittsburg.
Cappers, Birdie Fay; Pittsburg.
Carlton, Harold; Pittsburg.
Carlton, Robert; Pittsburg.
Carlyon, Lemoine; Pittsburg.
Carter, Hal; Pittsburg.
Chambers, Roy; Pittsburg.
Chambliss, Marion; Pittsburg.
Chambliss, Roy; Pittsburg.
Chapman, Gladys; Pittsburg.
Cheney, Edith; Pittsburg.
Comfort, Prince; Pittsburg.
Cooper, Evelyn; Pittsburg.
Corygon, Elliot; Pittsburg.
Covell, Verne; Pittsburg.
Crawford, Ruth; Pittsburg.
Crelley, Eleanor; Pittsburg.
Davies, Jane; Pittsburg.
Davis, Frank; Pittsburg.
Dellinger, Mary C.; Pittsburg.
Dellinger, William; Pittsburg.
DeVaney, Opal; Pittsburg.
Dickey, Helen; Pittsburg.
Dickey, Maurine; Pittsburg.
Dickinson, David Franklin; Pittsburg.
Draper, George; Pittsburg.
Dunwell, Davette; Pittsburg.
Dunwell, Gertrude; Pittsburg.
Ellsworth, Amelia Mary; Pittsburg.
Fikes, Russell; Pittsburg.
Fowler, Hugh; Pittsburg.
Fowler, John; Pittsburg.
Geatches, Alice Gregg; Pittsburg.

TRAINING SCHOOL—*Concluded.*

Geiselman, Frances; Pittsburg.
Gold, Norma; Pittsburg.
Graves, Elizabeth; Pittsburg.
Graves, Ruth; Pittsburg.
Green, Dency; Pittsburg.
Green, Opal; Pittsburg.
Guffey, Mary Elizabeth; Pittsburg.
Hall, Dale; Pittsburg.
Hall, Tommie; Pittsburg.
Hanson, Eleanor; Pittsburg.
Hobson, Donald; Pittsburg.
Hobson, Marcet; Pittsburg.
Hoffman, Carl; Pittsburg.
Hoffman, Helen; Pittsburg.
Hoffman, Vera; Pittsburg.
Hooper, Shirley; Pittsburg.
Hudspeth, Clifford; Pittsburg.
Innis, John Taylor; Pittsburg.
Jackson, Alda Mae; Pittsburg.
Jessup, Marion; Pittsburg.
Johnson, Olive; Pittsburg.
Jones, Paul; Pittsburg.
Jones, Pauline; Pittsburg.
Jones, Raymond; Pittsburg.
Jones, Thelma; Pittsburg.
Lackey, Raymond; Pittsburg.
Levy, Cass; Pittsburg.
Linthicum, Max; Pittsburg.
Lough, Imogene; Pittsburg.
McNalley, Edward; Pittsburg.
Mangrum, Margaret; Pittsburg.
Mangrum, Miles; Pittsburg.
Markle, Fergus; Pittsburg.
Marsh, Pattie; Pittsburg.
Martin, Ruth; Pittsburg.
Mead, Ina Sue; Pittsburg.
Mead, Lorene; Pittsburg.
Millard, Lucile; Pittsburg.
Millard, Raymond; Pittsburg.
Millard, Roland; Pittsburg.
Miner, Maxine; Pittsburg.
Moore, Emma; Pittsburg.
Moore, Maurine; Pittsburg.
Moore, Nadine; Pittsburg.
Nesch, Betty; Pittsburg.
Newell, Catherine; Pittsburg.
Nichols, Christine; Pittsburg.
Nichols, Dorothy; Pittsburg.
Ockerman, Pauline; Pittsburg.
Pease, Daniel; Pittsburg.
Pease, Ester; Pittsburg.
Pellegrino, George; Pittsburg.
Pellegrino, Harold; Pittsburg.
Probost, Frederick; Pittsburg.
Rankin, Clint Junior; Pittsburg.
Richards, Nina; Pittsburg.
Robins, Merle; Pittsburg.
Roby, Darlene; Pittsburg.
Rogers, Cecil; Pittsburg.
Rogers, Fred; Pittsburg.
Rust, John; Pittsburg.
Rust, Louise; Pittsburg.
Rust, Mary Elizabeth; Pittsburg.
Sanders, Jane Alice; Pittsburg.
Schaffer, John R.; Pittsburg.
Scott, Arthur; Pittsburg.
Scott, Bob; Pittsburg.
Scott, Helen; Pittsburg.
Scott, Lois; Pittsburg.
Scranton, Helen; Pittsburg.
Scranton, Hazel; Pittsburg.
Scranton, William; Pittsburg.
Search, Dorothy; Pittsburg.
Seeley, James; Pittsburg.
Sells, Paul; Pittsburg.
Shafer, Robert; Pittsburg.
Shannon, Earl; Pittsburg.
Shannon, Leroy; Pittsburg.
Sherwood, John; Pittsburg.
Shirk, Geneve; Pittsburg.
Simpson, Arthur; Pittsburg.
Smith, Aaron; Pittsburg.
Smith, Sidney; Pittsburg.
Sparks, Edna; Pittsburg.
Sparks, Hazel; Pittsburg.
Sparks, Jack; Pittsburg.
Sparks, Violet; Pittsburg.
Steffens, Charles; Pittsburg.
Sturm, John; Pittsburg.
Sullivan, Roy; Pittsburg.
Tanner, Lorene; Pittsburg.
Theising, James; Pittsburg.
Theising, John; Pittsburg.
Tittering, Ronald; Pittsburg.
Toft, Melvin; Pittsburg.
Trout, Mary; Pittsburg.
Walker, Merle; Pittsburg.
Wasser, Edna; Pittsburg.
Watson, Audria; Pittsburg.
Watson, Fay; Pittsburg.
Watson, Gay; Pittsburg.
Weaver, Billie; Pittsburg.
Webb, Edwin; Pittsburg.
Webb, Phillip; Pittsburg.
Webb, Millard; Pittsburg.
Weede, Dorothy; Pittsburg.
Weede, Richard; Pittsburg.
Wetzel, Marcella; Pittsburg.
Whitley, John Carl; Pittsburg.
Whitesitt, Robert; Pittsburg.
Wiles, Wilma; Pittsburg.
Williams, Wendell; Pittsburg.
Wines, Mardelle; Pittsburg.
Woodrow, Calvin; Pittsburg.
Wood, Dorothy; Pittsburg.
Wood, James; Pittsburg.
Wood, Virginia; Pittsburg.
Zickgraf, Louis; Pittsburg.

Special Vocational Students.

Adair, Frank Milton; Hiattville.
Adams, Frank M.; Pittsburg.
Albertson, Katherine Elizabeth; Pittsburg.
Alumbaugh, Irma Louise; Pittsburg.
Barber, Glen Wesley; Pittsburg.
Beckman, Geneva; Pittsburg.
Benton, Clarence Dickinson; Pittsburg.
Bogle, Olive G.; Pittsburg.
Bolze, Irwin Henry; Walnut.
Bonner, Patrick George; *Bayonne, N. J.*
Bork, Eddie Adam; Pittsburg.
Bose, Clifford Phelps; *Lafayette, Colo.*
Briggs, Claud Albert; Pittsburg.
Britton, Vida Anna; Weir.
Brown, J. S.; Pittsburg.
Brown, Morris Farris; *El Paso, Tex.*
Bruno, Dominic; *Belleville, Ill.*
Bryant, Vernon L.; *Richmond, Mo.*
Campbell, Emma E.; *Joplin, Mo.*
Carpenter, Thelma Eulalia; Colby.
Ceshi, Lucy; Mulberry.
Cooper, Nettie Lillian; Girard.
Davis, Pansie Ellen; McCune.
Dawson, Bessie May; Englevale.
Decuyper, Fernand; Arma.
Duffy, William Patrick; Pittsburg.
Duval, Gaston; Arma.
Eaton, Herbert; Pittsburg.

SPECIAL VOCATIONAL—*Concluded*.

Evans, Edwin L.; *Carl Junction, Mo.*
Finn, Roy Lane; Pittsburg.
Gentry, Carey Frank; Petrolia.
Geyer, Louise Catherine; Pittsburg.
Glenn, Walter; Pittsburg.
Graves, William B.; *Asbury, Mo.*
Griffin, Thelma Viola; Pittsburg.
Hanson, Harry Edwin; Mineral.
Harmon, Laura Elizabeth; Pawnee Station.
Harrigan, Evelyn Marie; Scammon.
Harris, Aubrey; *Hume, Mo.*
Harry, Glen; Pittsburg.
Harshfield, Sidney Clyde; Pittsburg.
Hefton, Howell; Pittsburg.
Hensley, Al; *Kansas City, Mo.*
Herbay, Joe Henry; Pittsburg.
Hobson, Arthur Roy; Pittsburg.
Hope, Hester; Pittsburg.
Hope, James; *Albia, Iowa.*
Howell, Lucile Elma; Scammon.
Jarrell, Earl; Pittsburg.
Jenkins, Cecil Icle; Weir.
Jenkins, Frances Louise; Pittsburg.
Johnson, Letha Myrtle; *Asbury, Mo.*
Johnson, Norris E.; Opolis.
Johnston, Doris Mary; Englevale.
Jones. Carl; *Belleville, Ill.*
Keaton, Rollin Madson; Pittsburg.
Keck, Leo; Peru.
Kelley, Ellen Viola; Frontenac.
Koesterer, Edwin Adolph; *Freeburg, Ill.*
Koopman, Emma; Pittsburg.
Lake, Francis Raymond; Pittsburg.
Larcher, Frank J.; *Gillispie, Ill.*
Lewis, Llewlleyn C.; *Des Moines, Iowa.*
Lewis, Mervin L.; Opolis.
Ley, William F.; Pittsburg.
Lynch, James; Radley.
McAnnally, Alice Kathryn; Arma.
McCleney, John S.; *Empire, Ala.*
McConaha, Gheen; Pittsburg.
McDonald, John L.; Pittsburg.
McDyson, Albert; Plaines.
Millard, Fred Earl; Pittsburg.
Miller, Clarence E.; Pittsburg.
Miller, Merle Aubrey; *Bethany, Mo.*
Modlin, Ernest Dewey; Pittsburg.
More, Lewis Walter; Pittsburg.
Morris, April; Coffeyville.
Mudd, Herbert Evans; Walnut.
Myers, Viola May; Pittsburg.
Neill, Robert Newell; Nortonville.
Nelson, Edith Viola; Pittsburg.
O'Dell, Beulah; Pittsburg.
Ott, Daniel Walter; Kinsley.
Paoli, Guido; *Collinsville, Ill.*
Park, Allan Tom; *Ashdown, Ark.*
Raymond, Oliver Perry; Pittsburg.
Reinecke, John Ernest; Pittsburg.
Remey, George Joseph; Pittsburg.
Richardson, Sylvester; *Tulsa, Okla.*
Roberts, Ida Gertrude; McCune.
Ryan, James; Mineral.
Sandwith, Alfred Edwin; Girard.
Schlichting, Dora; Pittsburg.
Scepanske, Junaita; Franklin.
Scott, Earl; Pittsburg.
Sheridan, Clyde; *Grafford, Ala.*
Simmons, Jewell Mildred; *Iantha, Mo.*
Slown, Cyril Lealand; Rexford.
Spencer, Dewey Admiral; *Joplin, Mo.*
Stalker, Paul; Pittsburg.
Stoeber, Herman John; *Belleville, Ill*
Scarpinato, Joseph; Pittsburg.
Tate, Fay Irena; Pittsburg.
Taylor, Russell L.; Iola.
Telfer, Wilma Gertrude; Pittsburg.
Thomas, David; *Mystic, Iowa.*
Throndson, Maxine; Farlington.
Umphres, Lucille Daisy; Kincaid.
Utz, Theodore; Pittsburg.
VanHouten, James A.; Pittsburg.
Weisner, Leo Laurence; Meriden.
Wente, Fred Frederick; Frontenac.
Wheeler, Fred G.; Pittsburg.
White, Mildred Irene; Weir.
Wiesenberg, Fred William; *Luverne, Iowa.*
Williams, Gordon; Wichita.
Wilson, Geneva; Hepler.
Wilson, Verner Leroy; Opolis.

Trade and Industrial Extension.

Abbott, Chris C.; Pittsburg.
Adams, Percy Ernest; Scammon.
Allman, Harry; Pittsburg.
Anderson, Gustaf A.; Scammon.
Armstrong, Arthur; Pittsburg.
Arnold, Charles Jr.; Scammon.
Balcom, Harry; Scammon.
Barnes, Fred H.; Pittsburg.
Bartholic, George; Pittsburg.
Bennett, James; Mulberry.
Bennett, Ralph Stanley; Scammon.
Berloznik, Mary; Franklin.
Beveridge, William; Franklin.
Bickel, Gustav George; Frontenac.
Bickel, John C.; Frontenac.
Bogatie, Frank; Frontenac.
Boyce, Hugh, jr.; Franklin.
Bradfield, Alice H.; Pittsburg.
Brady, William; Scammon.
Brazelton, Ernest E.; Pittsburg.
Briggs, Claude A.; Pittsburg.
Brown, Mrs. Robert G.; Pittsburg.
Brown, Roy Hale; Pittsburg.
Brown, Thomas Francis; Pittsburg.
Brunetti, Leonello; Pittsburg.
Buford, Forrest W.; Pittsburg.
Bumann, Mrs. Victor; Pittsburg.
Bumcrot, Mrs. Fred; Pittsburg.
Burke, Howard P.; Pittsburg.
Canfield, Lou Anna; Pittsburg.
Carmel, Lorenzo J.; Chicopee.
Carr, Charles E.; Mulberry.
Carter, Lottie M.; Pittsburg.
Cartwright, James William; Carona.
Cartwright, John Henry; Carona.
Caspari, Floyd; Pittsburg.
Cather, Ralph L.; Pittsburg.
Chicken, Benjamin; Pittsburg.
Clemens, Mrs. Charles C.; Pittsburg.
Cleveland, W. R.; Pittsburg.
Coates, Ernest Jesse; Mulberry.
Coci, Pete; Frontenac.
Cole, Mrs. Winifred; Pittsburg.
Coman, Blanche; Pittsburg.
Coman, Loretta Agnes; Pittsburg.
Connet, Nelson M.; Pittsburg.
Conrad, Ben K.; Pittsburg.
Coop, William; Arma.
Copeland, George; Scammon.
Coughenour, Mrs. C. E.; Pittsburg.
Coulter, Beirne; Pittsburg.
Cummings, Richard; Scammon.
Cunningham, Charles; Scammon.
Davidson, Clyde; Pittsburg.
Davidson, Mrs. L. B.; Pittsburg.
Davis, Margie; Pittsburg.
DeArmond, Glen; Pittsburg.
DeGaspari, Angelo; Pittsburg.

TRADE AND INDUSTRIAL EXTENSION—*Continued*.

Devlin, William Dudley; Mulberry.
Dixon, Freemont; Pittsburg.
Dorris, H. H.; Pittsburg.
Dorris, W. W.; Pittsburg.
Dray, Obadiah; Arma.
Drummond, James Mason; Franklin.
Dunlap, Blaine; Cherokee.
Dunn, Allan, Scammon.
Dunkin, James Edward; Arma.
Eason, Harry Franklin; Pittsburg.
Eaton, Herbert; Pittsburg.
Edmiston, John; Pittsburg.
Ellis, William; Frontenac.
Endicott, Earl L.; Mulberry.
Engleman, Christine Imogene; Pittsburg.
Evans, James Walter; Pittsburg.
Falletti, John M.; Arma.
Farrimond, George; Arma.
Ferguson, Harry Richard; Pittsburg.
Fern, John Paul; Scammon.
Fikes, Mrs. H. F.; Pittsburg.
Fintel, Anna C.; Pittsburg.
Flagg, Carroll Dean; Pittsburg.
Forshay, Edward G.; Pittsburg.
Frame, Lee; Pittsburg.
Frankenfield, Lloyd Raymond; Pittsburg.
Friend, Stella; Pittsburg.
Fruit, G. I.; Pittsburg.
Gadberry, Earl; Pittsburg.
Gadberry, Riley; Pittsburg.
George, James; Scammon.
Gerwest, Christina; Pittsburg.
Gilmour, Robert M.; Scammon.
Glenn, Walter; Pittsburg.
Goffe, A. A.; Pittsburg.
Gore, John; Pittsburg.
Gossett, H. W.; Pittsburg.
Goul, George E.; Cherokee.
Grant, Joseph Michel; Scammon.
Graves, Jess Alvin; Pittsburg.
Griffith, David Roy; Mulberry.
Grizzle, Fred; Mulberry.
Haddow, David B.; Franklin.
Hanes, Willard; Pittsburg.
Haney, Clay; Weir.
Hansen, John Andrew; Pittsburg.
Hayman, William F.; Pittsburg.
Higher, Charles; Mulberry.
Hislop, William; Arma.
Hoover, Elmer Earl; Pittsburg.
Horn, Thomas T.; Scammon.
Hromek, Joseph, Jr.; Arma.
Hughes, Hillory Don; Scammon.
Irwin, Arlie; Pittsburg.
Jackson, Ira C.; Mulberry.
Jacobs, Louis; Pittsburg.
Jenkins, John; Scammon.
Jones, Frank H.; Scammon.
Karb, Mrs. J. H.; Pittsburg.
Kaymierski, Joseph; Pittsburg.
Kelly, John L.; Radley.
Kennedy, William W.; Pittsburg.
Keplinger, Blanche; Pittsburg.
Keplinger, Charles R.; Pittsburg.
Kiehl, Carl E.; Pittsburg.
Klein, Thomas C.; Arma.
Klimek, Louis; Mulberry.
Klimek, Simon; Girard.
Kotzman, John Jacob; Mulberry.
Krenker, Anna; Pittsburg.
Kubler Fred H.; Pittsburg.
Lampton, William; Scammon.
Laney, Ross Arnold; Pittsburg.
Lechien, Nicholas; Frontenac.
Lehman, Leonard; Mulberry.
Lewis, John; Pittsburg.
Lewis, Walter W.; Scammon.
Ley, Mrs. W. F.; Pittsburg.
Lamb, John R.; Pittsburg.
Linticum, Arizona; Pittsburg.
Logan, Robert; Cherokee.
Lucas, George; Pittsburg.
McCullough, Jack; Scammon.
McGanis, Pete; Frontenac.
McIlrath, Will J.; Mulberry.
McIntyre, William Earnest; Scammon.
McMillan, Charles; Pittsburg.
McNeill, Jennie V.; Pittsburg.
Mangan, Edward Leo; Pittsburg.
Mangrom, Floyd Lee; Pittsburg.
Manning, Edward A.; Pittsburg.
Martin, Edgar I.; Pittsburg.
Massman, Ernes Adam; Pittsburg.
Masterson, John Patrick; Scammon.
Mathes, M. G.; Pittsburg.
Maylen, Earl; Carona.
Mendenhall, Mrs. E.; Pittsburg.
Mielke, Olga; Pittsburg.
Miner, Mrs. F. H.; Pittsburg.
Morgan, Herrold; Mulberry.
Morrison, Robert; Scammon.
Mott, James; Pittsburg.
Munson, Clarence Henry; Scammon.
Munson, Leslie; Scammon.
Mycroft, William R.; Frontenac.
Nicaise, Albert; Pittsburg.
Oliver, Thomas William; Pittsburg.
Olson, Albert; Mulberry.
Olson, Alder T.; Mulberry.
Olson, Alfred; Mulberry.
Olson, Fred M.; Mulberry.
Park, John; Radley.
Parker, Chester; Scammon.
Patton, May; Pittsburg.
Payne, Ira R.; Scammon.
Payton, Mrs George W.; Pittsburg.
Perkins, C. E.; Pittsburg.
Pike, Elva; Pittsburg.
Portwood, Woodson; Mulberry.
Price, C. E.; Pittsburg.
Procko, John; Mulberry.
Pryor, James J.; Scammon.
Puckett, Calvin; Pittsburg.
Qurton, C. R.; Scammon.
Reedy, Paul; Scammon.
Reno, Samuel Harold; Scammon.
Richards, Carl; Pittsburg.
Richmond, Raymond; Pittsburg.
Riley, Homer W.; Pittsburg.
Robertson, Richard; Pittsburg.
Robinson, Ira I.; Mulberry.
Robson, Ruth Elliott, Pittsburg.
Robson, William Elliott; Pittsburg.
Roesener, Walter; Pittsburg.
Rogers, Jesse Clarence; Pittsburg.
Rogers, John H.; Scammon.
Sanders, Homer L.; Pittsburg.
Savute, Anthony; Scammon.
Schasteen, Mrs. Kate; Pittsburg.
Schooley, Floyd Clayton; Pittsburg.
Scott, Howard A.; Scammon.
Seifert, Edna; Pittsburg.
Sergeant, Lon; Pittsburg.
Sessi, Carolina; Pittsburg.
Shawger, Stephen; Pittsburg.
Shawger, W. H.; Pittsburg.
Sheil, Mary Cecelia; Pittsburg.
Sherwood, James; Pittsburg.
Shirk, Wilbert Ray; Pittsburg.
Shuler, Ollie May; Pittsburg.
Skinner, Mrs. E. H.; Pittsburg.
Silver, Clarence E.; Pittsburg.
Simion, Charles; Pittsburg.
Simion, John L.; Pittsburg.
Sine, Beryl E.; Scammon.
Small, Charles; Pittsburg.
Smith, Dick; Pittsburg.
Smith, J. D.; Pittsburg.

TRADE AND INDUSTRIAL EXTENSION—*concluded.*

Smith, H. E.; Pittsburg.
Smith, Mrs. Lavon; Pittsburg.
Smith, Mrs. R. L.; Pittsburg.
Smith, Mabel Dene; Pittsburg.
Smith, William Roy; Pittsburg.
Sparks, Loy Omar; Pittsburg.
Spriggs, M. A.; Pittsburg.
Stanley, William Curtiss; Scammon.
Steele, James Clarence; Scammon.
Stefancic, Celia; Franklin.
Stefancic, Matilda; Franklin.
Stockinger, Joe; Frontenac.
Stowkinger, Jacob; Frontenac.
Sullivan, John A.; Columbus.
Sutton, E. H.; Mulberry.
Svaldi, Joe; Chicopee.
Sweeney, Madaliene; Pittsburg.
Taylor, Mrs. H. C.; Pittsburg.
Thomas, R. C.; Scammon.
Timball, Cecyle; Pittsburg.
Towers, Carl E.; Pittsburg.
Usher, William; Arma.
Van Wie, Clarence David; Pittsburg.
Vaviot, Ernest Buster; Pittsburg.
Walker, Bert C.; Pittsburg.
Walker, William; Pittsburg.
Ward, Lewis James; Pittsburg.
Ward, James L.; Pittsburg.
West, Ira A. E.; Mulberry.
Whittaker, Mrs. W. P.; Pittsburg.
Wickersham, John F.; Scammon.
Wilcox, Blanche A.; Pittsburg.
Williams, Lillian E.; Pittsburg.
Willis, Joseph; Scammon.
Wilson, E. E.; Pittsburg.
Yeohum, William Riley; Mulberry.

Summary of Attendance.

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Graduates	31

COLLEGE DEPARTMENT.

Seniors	136
Juniors	210
Sophomores	392
Freshmen	1,110
Specials	165
	2,044

DEPARTMENT OF MUSIC.

Students in music	243

SENIOR PREPARATORY DEPARTMENT.

Seniors	58
Juniors	87
Sophomores	99
	244

JUNIOR PREPARATORY DEPARTMENT.

Third year (ninth grade)	67
Second year (eighth grade)	28
First year (seventh grade)	27
	122

TRAINING SCHOOL.

First six grades and kindergarten	181

SPECIAL VOCATIONAL STUDENTS.

Students taking vocational subjects only	118
Trade and industrial extension students	252
Total enrollments	3,204
Total duplications	92
Separate enrollments	3,112

BY STATES.

SUMMARY OF ATTENDANCE—*concluded.*

Kansas	2,771	Louisiana	1
Alabama	2	Missouri	232
Arkansas	20	Nebraska	1
Arizona	1	New Jersey	1
California	1	New Mexico	1
Colorado	1	Ohio	2
Illinois	8	Oklahoma	43
Indiana	3	Texas	15
Iowa	8		
Kentucky	1	Total separate enrollments,	3,112

SUMMARY OF ENROLLMENT, CERTIFICATES AND DEGREES BY YEARS.

School year.	One-year certificates.	Three-year certificates.	Life certificates.	Degrees.	Enrollment.	Total No. credentia issued.
1903-'04...	14	....	....	....	143	14
1904-'05...	40	....	....	....	184	40
1905-'06...	23	9	....	....	276	32
1906-'07...	31	14	....	....	351	45
1907-'08...	21	11	....	....	325	32
1908-'09...	16	44	....	....	467	60
1909-'10...	26	38	12	....	723	76
1910-'11...	20	18	80	....	1066	118
1911-'12...	41	74	96	....	1183	211
1912-'13...	49	80	113	13	1416	225
1913-'14...	88	138	153	22	1650	400
1914-'15...	83	123	208	51	2159	445
1915-'16...	75	127	240	52	2514	494
1916-'17...	156	149	224	73	2745	602
1917-'18...	302	148	207	49	3433	706
1918-'19...	462	120	178	66	3088	846

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STATE MANUAL TRAINING NORMAL SCHOOL

ANNUAL CATALOGUE

1921-1922

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Pittsburg, Kansas

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GENERAL AND INDUSTRIAL ARTS AND
VOCATIONAL SUBJECTS

ANNUAL CATALOGUE

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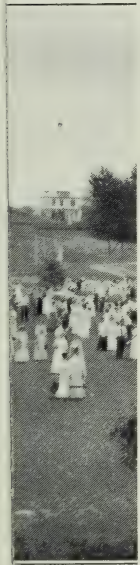

ORMAL SC

A SUMMER SCHOOL GROUP AT STATE MANUAL TRAINING NORMAL SCHOOL.

GROUP IN PLAYGROUND ACTIVITY, STATE MANUAL TRAINING NORMAL SCHOOL.

SECTION I.

General Information.

CALENDAR, 1921-1922.

September 12, Monday	Entrance examinations.
September 13, Tuesday	Enrollment.
September 14, Wednesday	Beginning of class work.
November 14, Monday	Midsemester term opens.
November 23–28	Thanksgiving vacation.
December 19, Monday	First semester musical recital.
December 20, Tuesday	Contest in oration and debate.
December 22, Thursday	Work closes for 1921 at 4:10 p. m.
January 3, 1922, Tuesday	Resumption of first semester's work.
January 20, Friday	First semester's work closes.
January 23, Monday	Second semester opens with enrollment.
January 24, Tuesday	Beginning class work.
March 24, Friday	Commemoration Day.
March 27, Monday	Midsemester term opens.
April 24–29	Annual musical festival.
May 21, Sunday	Baccalaureate sermon.
May 22, Monday	Annual recital by music department.
May 23, Tuesday	Contest in dramatic art and declamation.
May 24, Wednesday	Commencement.
May 31, Wednesday	First term summer session opens
July 28, Friday	First term summer session closes.
July 31, Monday	Second term summer session opens.
August 25, Friday	Second term summer session closes.

SOCIAL CALENDAR.

September 22, 1921, Thursday, general Faculty reception to students.
September 26, 1921, Monday, Y. W. & Y. M. reception to student body.
October 19, 1921, Wednesday, annual picnic at Lincoln Park.
January 26, 1922, Kansas Day, commemoration.
February 16, 1922, Thursday, girls' friendship dinner, Y. W.'s in charge.
February 22, 1922, Wednesday, College reception.
May 13, 1922, Saturday, senior girls' breakfast.

CALENDAR

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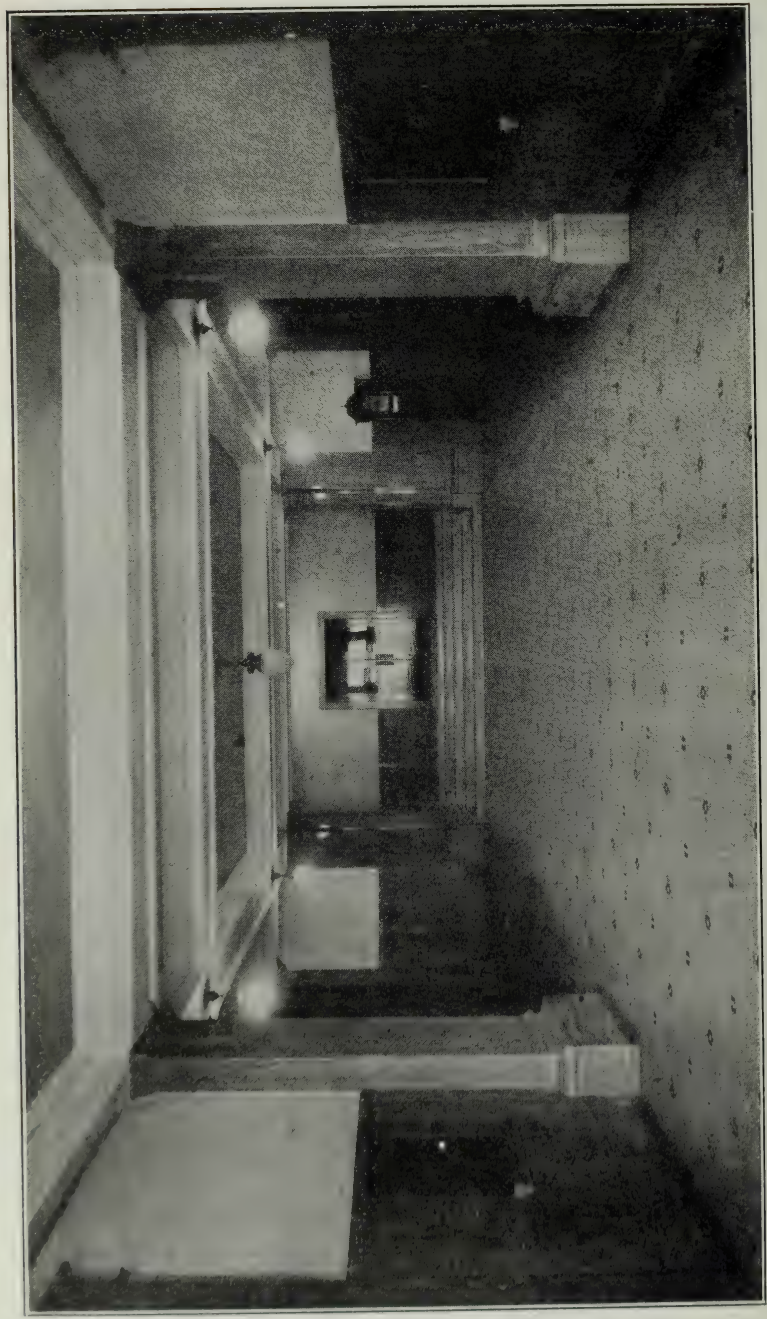

ROTUNDA, CARNEY HALL.

FOREWORD.

In presenting this catalogue of the State Manual Training Normal College for the year 1921-'22, we do so with the feeling that some changes at least have been made which will prove of decided advantage.

This institution is primarily a teachers' college, seeking to equip in the most efficient manner those who wish to become teachers.

The reader of this catalogue will observe that while courses are set forth for the preparation of teachers for rural, elementary grade, and high school, there are also many opportunities in courses offered for preparation in special fields of teaching, such as Drawing, Music, Commerce, Agriculture, Industrial Arts, Home Economics and Physical Education.

Another feature of the catalogue is the opportunity offered for those who desire preparation for purely vocational, industrial and technical fields of activity.

To serve this increasing demand, and especially as it has become so apparent and urgent in this particular part of our state, two-year courses of the most practical nature and content are now being offered in the following: Industrial, Electrical Engineering, Mining Engineering, Mechanical Engineering, Civil Engineering, Machine Shop, Drafting and Design, Pattern Making, Automobile, Cafeteria Management, Home Makers, Sheet Metal, Commercial and Printing. Full two-year credit is given for the above courses by engineering colleges when the work has been completed by those who are graduates of accredited four-year high schools. For those who have not had the advantage of such high-school preparation, two-year vocational courses along the line of Mining, Steam and Stationary Engineering, Electrical Trades, and Telegraphy and Radio work are offered.

No apology is made for this seeming innovation in the curricula of a teachers' college. Far too long have the public schools of our country failed to make any effective and practical application or any vital functioning of the subjects taught. School life has been distinctively one thing; the social life of our people another; and so thoroughly have the two been kept apart that, like the Jews and Samaritans of old, they have had, for the most part at least, "no dealing with each other."

This undesirable and unprofitable condition has not been the fault of the public-school teacher nearly so much as the fault of our higher institutions of learning. Many teachers in our public schools have not had special preparation for the work which they are doing, others who have had preparation have received it in higher institutions of learning where little or no effort has been made toward a practical application of the subjects taught; but a changed, or at least a greatly modified notion as to the whole function of education is apparent. A notion that the value of the practical, that education which the great masses of mankind have long felt the need of for increased efficiency of the common activities of daily life, has had too little value placed upon it; and this changed notion has taken place without the least discredit to the beautiful, the inspiring, and the so-called cultural and refining elements and factors in education.

The teachers' college which does not possess within its faculty, its equipment and its facilities, the ability to carry out courses for the preparation of individuals for the most effective and practical citizenship in other fields of activity; or the teachers' college which places so little value upon this particular phase of education as a legitimate part of our educational responsibility, cannot perform its greatest service to the public.

The same educational preparation that prepares an individual to be a real efficient teacher is the same sort of education that prepares him to be an efficient and good citizen, so far as the courses taken are concerned. There is not one kind of knowledge in science for the teacher and another kind for the man who does not expect to teach; there may be a difference in quantity, not in quality.

So look this catalogue through if you contemplate the attractive profession of teaching. We feel sure you cannot fail to be interested. If, on the other hand, you desire a preparation for some other field of activity, the probabilities are you will find the opportunity for such preparation set forth in this catalogue. For further information or particulars write,

W. A. BRANDENBURG, *President.*

KANSAS STATE MANUAL TRAINING NORMAL.

THE FACULTY.

The names of the members of the Faculty are arranged in order of their tenure, except President and Dean of College.

WILLIAM A. BRANDENBURG, PH. B., President.

Drake University, Ph. B., 1895-1900, Graduate of College of Liberal Arts; Superintendent Park Avenue Schools, Des Moines, Iowa, 1900-1903; Superintendent Capital Park Schools, Des Moines, Iowa, 1903-1905; Superintendent of Schools, Mason City, Iowa, 1905-1910; Superintendent of Schools, Oklahoma City, 1910 to August, 1913. Assistant Professor in Department of Education, Drake University, Summer Session, 1903, 1904, 1905; Member National Education Council; Author of "Outline Studies in U. S. History and Civics"; President State Manual Training Normal College, August, 1913—.

G. W. TROUT, A. B., A. M., Dean of College; Professor of History and Social Sciences.

A. B. Ottawa University, 1899; Student of Theology and Sociology, Rochester Seminary, 1899-1902; M. A. Ottawa University, 1902; Professor of History and Social Sciences, Kansas State Manual Training Normal, 1907—.

ODELLA NATION, B. S., Librarian.

Special work in Library Methods, Kansas State Normal, 1903; B. S. State Manual Training Normal, 1918. State Manual Training Normal, 1903—.

EULALIA E. ROSEBERRY, B. S., Professor of Geography.

Diploma, Kansas State Manual Training Normal, 1906; Diploma and Life State Certificate, Kansas State Normal, 1907; Professor of Geography, Kansas State Manual Training Normal, 1907—; Special Work, Chicago University; B. S. State Manual Training Normal, 1916.

JAMES ANDERSON YATES, B. S., M. S., Professor of Chemical and Physical Sciences, Director Electrical and Mining Engineering.

B. S. University of Kentucky, 1890; M. S. University of Kentucky, 1899; Graduate Student, University of Chicago, Summer Terms, 1895, 1896, 1898, 1900, 1901, 1902; Fellow, American Association Advancement of Science; Principal Laurel Seminary, London, Ky., 1890-1892; Professor Natural Sciences, Williamsburg Institute, 1892-1897; Professor of Natural Sciences, Ottawa University, 1897-1907; Union Pacific Fossil Field Expedition, Summer, 1899; Assistant Geologist, Kansas State Geological Survey, Summers, 1903, 1904, 1905, 1906; Professor Physical Sciences, Kansas State Manual Training Normal, 1907—.

ERMINE OWEN, M. A., Professor of English.

M. A. McGee College (now Missouri Valley College), 1879; Summer Student in Hammil School of Expression, 1886 and 1887; Chicago Conservatory of Expression, 1888; Fritz Krummel Turnverein, New York, 1902; Chicago Normal School, 1903; Head of Department of History and Civics, State Normal School, Kirksville, Mo., 1883-1899; Professor of Oratory and Physical Culture and Assistant in English, State Normal School, 1899-1904; Professor of English, State Manual Training Normal, 1907—.

D. M. BOWEN, A. B., Principal of Training School.

Diploma, Central Normal College, Danville, Ind., 1885; B. A. Kansas Normal College; Chicago, Summer, 1914; Life Diploma, Kansas Board of Education, 1905; Teacher, Fort Scott, 1889; Special Work, Indiana University, Summer, 1892; Special Work, University Rural and Village Schools, 1885-1888; Ward Principal, 1889-1892; Principal High School, Fort Scott, 1892-1895; Superintendent City Schools, Fort Scott, 1895-1909; Principal of Training School, Kansas State Manual Training Normal, 1909-1913; Secretary, State Board of Education Administration, 1913-1915; Principal of Training School, Kansas State Manual Training Normal, 1915, 1916.

ORIS P. DELLINGER, A. B., PH. D., Professor of Biology.

Diploma, Indiana State Normal, 1900; A. B. Indiana State University, 1904; Fellow in Biology, Clark University, 1904-1907; Ph. D. Clark University, 1907; Fellow, American Association Advancement of Science; Instructor in Biology, Indiana State Normal, 1901-1903; Instructor in Botany and Nature Study, Indiana University, Summer Terms, 1902-1908; Assistant in Biology, Clark College, 1904-1907; Instructor in Biology, Clark College, 1907-1908; Professor of Biology, Winona College, 1908-1909; Professor of Biology, Kansas State Manual Training Normal, 1909—.

Lillian I. McLean, B. S., Primary Critic Teacher in Training School.

Primary Teacher, Fort Scott, 1903-1909; Primary Teacher, Kansas City, Mo., 1909; Primary Critic Teacher, Kansas State Manual Training Normal, 1911—.

J. A. G. Shirk, A. M., M. S., Professor of Mathematics and Applied Mechanics, Director Civil and Mechanical Engineering.

A. B. McPherson College, 1901; A. M. McPherson College; M. S. University of Kansas, 1905; Sigma Xi, University of Kansas, Iota Chapter, 1905; Graduate Student, University of Kansas, Summer Session, 1909, 1911; Graduate Student, University of Chicago, Summer Quarters, 1906 and 1910; Professor of Mathematics and Physical Sciences, McPherson College, 1901-1904; Fellow in Mathematics, University of Kansas, 1904-1905; Assistant Instructor in Mathematics, University of Kansas, 1905-1906; Professor of Physics and Engineering, Ottawa University, 1906-1912; Assistant Professor of Physical Sciences, Kansas State Manual Training Normal, 1912-1914; Professor of Mathematics, 1914; Professor of Mathematics and Applied Mechanics.

A. H. Whitesitt, B. S., Professor of Industrial and Applied Arts.

Vincennes University, 1897; Diploma, Indiana State Normal, 1908; Bradley, Polytechnic Institute and the Stout Institute, Summers, 1908-1912; Director of Manual Training, City Schools, East Chicago, 1908-1911; Instructor in Emmerich Manual Training High School, Indianapolis, 1911-1913; Director of Woodworking Department, Kansas State Manual Training Normal, 1913-1917; Director of Industrial and Applied Arts, 1918—.

Adela Zoe Wolcott, Ph. B., A. M., Professor of Home Economics and Joint Director.

Diploma, American School of Home Economics, 1907; A. D. E., Lewis Institute, 1908; Ph. B. University of Chicago, 1909; Student, Graduate School of Home Economics, Summer, 1912; Head of Department of Home Economics, Colorado Woman's College, Denver, Colo., 1909-1913; A. M. Teachers' College, Columbia University, 1918; Professor of Home Economics, State Manual Training Normal School, 1913—.

Margaret Coventry, A. B., Assistant Professor Physical Sciences.

Grade Teacher, Fort Scott, 1906-1910; Life State Certificate, Kansas State Manual Training Normal, 1912; Student Assistant in Chemistry, Kansas State Manual Training Normal, 1911-1913; A. B. Kansas State Manual Training Normal, 1913; Assistant in Chemistry, Kansas State Manual Training Normal, 1913—.

Belle Provorse, Secretary to the President.

Graduate of Montgomery County High School, Independence, Kan., 1909; National Business College, Independence, Kan., 1910; Teacher's Certificate, Gregg School, Chicago, 1911; Life Certificate, State Manual Training Normal, 1918; Principal, Shorthand Department, Coffeyville Business College, Coffeyville, Kan., 1911-1912; Shorthand Instructor, Farmers' Business College, Fort Worth, Tex., 1912-1913; Shorthand Instructor, State Manual Training Normal School, 1913; Stenographer, State Manual Training Normal, 1914; Secretary to the President, State Manual Training Normal School, 1917—.

William Edgar Ringle, A. B., Associate Professor of Biology.

A. B. Kansas State University, 1898; author of "Student's Botany," a spring flora of Kansas; From June, 1918, to July, 1919, Area Educational Superintendent with A. E. F. in France; State Manual Training Normal, 1913—.

F. H. Dickinson, Assistant Professor of Industrial Arts.

Served apprenticeship in Santa Fe Shops, Topeka; Twelve years' consecutive service with Santa Fe Railway Company; Two years in service of the Smith Automobile Company, Topeka, Kan.; Two years with the Chalmers Machine Co., Milwaukee, Wis.; Technical Training in the Stout Institute and Kansas State Manual Training Normal; Four years Director of Manual Training in High School, Coffeyville, Kan.; Instructor in Pattern Making and Foundry, State Manual Training Normal, 1914—.

Hattie Moore Mitchell, A. M., Professor of Methodology, and Dean for Women.

Ph. B. Drake University, 1906; Ph. B. Drake University, 1898; A. M. Drake University, 1907; Student, University of Chicago, 1909; Teacher of Mathematics in High School, Mason City, Iowa, 1888-1890; Principal of Schools, Floyd, Iowa, 1893-1895; Preceptress in Nora Springs Seminary, 1895-1897; Supervisor, Training School for Primary Teachers, Drake University, 1897-1902; Dean of Women, Drake University, 1902; Instructor in Mathematics, Drake University, 1902-1909; Assistant Professor of Mathematics, Drake University, 1909-1910; Professor of Methodology, Drake University, 1910-1914; Professor of Methodology, Kansas State Manual Training Normal, 1914—.

E. F. SCHOLTZ, B. S., Director of Department of Commerce.

State Manual Training Normal; K. N. C.; Clinton Academy; Cooper College; Graduate Gregg School, Chicago, and P. B. C., Pittsburg; Principal, Ward Schools; Head of Department, Pittsburg Business College; Head of Commercial Department, Pittsburg High School, Pittsburg, Kan.; Kansas State Manual Training Normal, 1914—.

ANNIE MARRIOTT, B. S., Assistant Professor of Home Economics.

Life certificate, Kansas State Manual Training Normal, 1912; B. S. State Manual Training Normal, 1914; Chicago University, Summer, 1914; Student Assistant in Domestic Science, Kansas State Manual Training Normal, 1913-1914; Assistant Instructor in State Manual Training Normal, 1914-1918; Assistant Professor, 1918—.

WALTER MCCRAY, Director of Music.

Student Herman Bellstedt, World's Greatest Cornet Soloist and Band Master; Student, Harbard Brase, of the Conservatory, Stockholm, in Harmony and Counterpoint; Director of Music, Nickerson Normal and High School, 1899-1900; Head of Band Department, Teacher of Harmony, Musical History, Supervisor of Model School Music, Bethany College, Lindsborg, Kan., 1901-1903; Received First Prize at the State Musical Jubilee at Hutchinson, Kan., in Cornet Soloist Contest, 1899; Conductor of McCray's Band, which is one of the leading organizations of the Middle West; Wide experience as Conductor of Choral Societies; Supervisor of School of Music.

O. F. GRUBBS, A. B., B. S., Associate Professor of History.

Diploma, State Normal School, 1912; Life Certificate, 1905; A. B., B. S., Kansas University, 1914; Teacher and Ward Principal in City Schools, Kansas, 1902-1906; Principal, Thayer, Kan., 1906-1909; Superintendent, Colony, Kan., 1909-1910; Superintendent, Neodesha, Kan., 1910-1912; Assistant in History, Kansas State Manual Training Normal, 1914—.

R. HESSELBERG, Professor of Violin.

Student of W. Besekirski, Imperial Court Violinist in Moscow, Russia; Graduate Royal Academy of Music in Berlin, Main Subject, Violin, under Prof. Dr. Joseph Joachim, 1894-1899; Private Assistant to Doctor Joachim, in Berlin, 1900-1905; Concertized in Europe, 1905-1907; Teacher of the Calhoun School of Music, Joplin, Mo., 1907-1914; Soloist with the Minneapolis Symphony Orchestra, 1912; Chicago Symphony Orchestra, 1908; St. Louis Symphony Orchestra, 1913; Soloist of the American Guild of Violinists, in Chicago, 1912; President F. Kneisel; Member and Soloist of the Missouri Music Teachers' Association, 1913.

CHARLES R. WASSER, JR, Assistant Professor of Industrial Arts.

Graduate, Williamson Industrial School, Pennsylvania, 1908; Three Years' Practical Shop Experience with Bethlehem Steel Company, Bethlehem, Pa., and Ingersoll, Rand & Co., Easton, Pa.; Superintendent of Shop Work, Ursinus College, Collegeville, Pa., 1910-1912; Student, Teachers' College, Columbia University, Summers, 1908-1912; Resident Student, 1912-1913; Instructor in Furniture Design and Cabinetmaking, Kansas State Manual Training Normal School, 1915—.

SAMUEL J. PEASE, M. A., Professor of Languages.

A. B. Northwestern University, 1897; M. A. Northwestern University, 1898; Graduate Student at Northwestern, 1897-1899, and Summer, 1908; Colorado, 1902-1903; Chicago, 1903-1905 (Fellow in Greek), and Summers, 1900, 1903, 1906, 1914; Instructor in Greek and Modern Languages, Hamline University, 1899-1901; History and Civics, Colorado State Preparatory School (Boulder), 1902-1903; Instructor in Greek and German to Assistant Professor of German and French, University of North Dakota, 1905-1913; Latin and German, Chicago High Schools, 1913-1915; Professor of Languages, Kansas State Manual Training Normal School, 1915—.

VIVIAN ATWOOD, B. S., Associate Professor of Applied Arts.

Diploma, Applied Arts School, Chicago, Ill., 1913; Postgraduate work, 1914; University of Chicago, Summer, 1914; Supervisor of Applied Arts, Coffeyville, Kan., 1914-1916; Instructor in Applied Arts, State Manual Training Normal School, 1916—.

ERNEST BENNETT, B. S., Associate Professor of French and Latin.

Student in Ottawa University, 1907-1908; B. S. Kansas State Manual Training Normal School, 1917; Principal, Sedan, Kan., High School, 1904-1907; Superintendent of Schools at Severy, Kan., 1908-1911; Superintendent of Schools at Howard, Kan., 1911-1914; Conductor and Instructor in Normal Institutes; Member Editorial Staff of Pittsburg *Daily Headlight* two years; Instructor in Languages, State Manual Training Normal School, 1916-1918; On leave as Y. M. C. A. secretary with French troops in France, 1918-1919; University of Chicago, summer 1920; Assistant Professor of French and Latin, 1919—.

J. F. Mitchell, A. B., A. M., Registrar.

A. B. Ohio Northern University, Ada, Ohio; A. M. Drake University, Des Moines, Iowa; Graduate Student, University of Chicago; Superintendent of Schools, Garner, Iowa, Nora Springs, Iowa; Principal Nora Springs Seminary, Nora Springs, Iowa; Chair of History, Drake University, Des Moines, Iowa; Registrar, 1917—.

Edgar Nelson Mendenhall, Ph. B., Professor of Rural Education.

Ph. B. University of Chicago, 1917; Student, Franklin College, Franklin, Ind., Spring Term, 1891; Indiana University, Summer, 1899, Spring Term, 1893, Summer, 1910; Harvard University, Summer, 1896; Teacher in Rural Schools, Johnson County, Indiana, 1890-1893; Principal Township Rural High School, 1893-1896, Decatur County, Indiana; Teacher and Principal City High School, 1896-1903, Greensburg, Ind.; County Superintendent of Schools, 1903-1911, Decatur County, Indiana; Member of Indiana State Reading Circle Board, 1906-1909; City Superintendent of Schools, 1911-1916, Goshen, Ind.

C. O. Van Dyke, M. A., Associate Professor of Mathematics.

B. A. Campbell College, 1908; Surveyor, Rooks County, Kansas, 1909-1910; M. A. Kansas University, 1910; Summer Sessions, Kansas University, 1910 and 1916; Professor of Mathematics, Campbell College, 1910-1914; Professor of Mathematics, Kansas City University, 1914-1915; Department of Social Science and Instructor in Mathematics, Kansas City University, 1915-January, 1918; Assistant Professor of Mathematics, Kansas State Manual Training Normal School, January, 1918—.

Edith E. Casseday, Assistant Professor of Home Economics.

Student, University of Minnesota, 1909-1911; Student, Teachers' College, Columbia University, Summer, 1918; Instructor in Home Economics, St. James, Minn., 1912-1913; Supervisor of Home Economics, Wabasha, Minn., 1913-1914; Supervisor of Domestic Art, Waterloo, Iowa, 1915-1918; Assistant Professor of Home Economics, State Manual Training Normal School, 1918—.

George V. Emery, A. B., Associate Professor of Physical Sciences.

A. B. University of Kansas, 1913; Three Years Student of Electrical Engineering, University of Kansas; Graduate Student, Kansas University, Summer, 1914; Kansas City Western Cabinet and Fixture Company, Summer, 1908; Assistant Electrical Inspector, Colorado Fuel and Iron Company, Pueblo, Colo., Summer, 1909; Superintendent, Viola, Kan., Schools, 1913-1914; Instructor in Physics, Iowa State College, Ames, Iowa, 1914-1918; Graduate Work, Iowa State College; Kansas State Manual Training Normal School, 1918—.

Anne Caseley, A. B., Assistant Professor of History.

Diploma, Richmond Normal Training School, 1902; B. A. Degree, Earlham College, Richmond, Ind., 1911; Student, Chicago University, Summers, 1905-1912-1918; Traveled in Europe Summer of 1913; Teacher of History and English in Seventh and Eighth Grades, Kendalville, Ind., 1902-1905; Teacher of History in High School, Kendalville, Ind., 1905-1909; Teacher of History in High School, Kendalville, Ind., 1911-1912; Teacher of History in Muncie Normal, Muncie, Ind., 1912-1917; Teacher of History, Kansas State Manual Training Normal School, 1918—.

William H. Matthews, B. S., Assistant Professor of Chemical and Physical Sciences.

B. S. State Manual Training Normal, 1920; Instructor Physical Sciences, State Manual Training Normal, 1918, 1919; Assistant Professor, Chemical and Physical Sciences, State Manual Training Normal, 1920—.

Jessie C. Leslie, B. S., Critic Teacher Junior High School.

B. S. in Education; Seven Years Experience in City Schools; One Year High-school Experience; State Manual Training Normal School, 1918—.

Anthony Stankowitch, Professor of Piano.

Graduate, Royal Conservatory of Leipsic; Three Years' Postgraduate Work, Vienna; Head of Piano Department, Philadelphia Conservatory, Three Years; Instructor Piano in Northwestern University, Five Years.

Elizabeth Hallenbeck Gilbert, Professor of Voice.

Studied Voice under Madame Dyas-Standish, of New York City, Herman De Vries and other Teachers of Chicago, but for the past Nine Years with Lucille Stevenson, of the Cosmopolitan School, Chicago; Piano from the age of six, with Various Teachers in Minneapolis, Chicago and New York; Taught Privately in Chicago, was Soloist at Several Churches, and Appeared in Recitals, Season 1917-1918; Teacher of Voice and Director of Girls' Glee Club at Lawrence Conservatory, Appleton, Wis.; Honorary Member of Mu Phi Epilson, National Musical Sorority; Kansas State Manual Training Normal, 1919—.

WALTER S. LYERLA, B. S., Assistant Professor in Commerce.

Kansas State Manual Training Normal, 1918; Diploma, Gem City Business College, Quincy, Ill., 1906; Student, Illinois State Normal, 1908-1909; University of St. Louis, 1909-1910; Principal in Rural and City Schools, Cherokee County, Kansas, 1911-1914; Head of Commercial Departments, Junior and Senior High Schools, Chanute, Kan., 1914-1917; Principal, Senior High School, Chanute, Kan., 1918-1919; State Manual Training Normal, 1919—.

WINONA MCLATCHEY, Instructor in Public-school Music and Harmony.

Graduate of Fine Arts Department of Washburn College at Topeka, 1914; One Semester's Work in Public School Music, Conducting Voice and Piano in Columbia University, New York, 1916; Public School Music Supervisor in Abilene, Kan., one year, 1914-1915; in Iola, Kan., two years, 1915-1917; in Pittsburg, Kan., two years, 1917-1919; State Manual Training Normal, 1919—.

L. A. GUTHRIDGE, B. S., Director of Extension Department.

Principal Washington School, Independence, Kan., 1899-1909; Superintendent Galena City Schools, Galena, Kan., 1909-1913; Practical Agriculture, 1913-1915; Principal McKinley School, Independence, Kan., 1915-1919; Director of Extension Department, Kansas State Manual Training Normal, 1919—.

L. C. GUFFEY, Instructor in Commerce.

Western Kentucky State Normal, 1906-1907; B. C. S., Bowling Green Business University, Bowling Green, Ky., 1905-1908; Principal Commercial Department, Joplin Business College, Joplin, Mo., 1909-1910-1911; Assistant to Principal and Principal, Commercial Department, Cherokee County High School, Columbus, Kan., 1911, 1912, 1913, 1914, 1915; Principal, Commercial Department, Labette County High School, Altamont, Kan., 1916-1917; Bookkeeper for Stauffer Cammack Grain Co., Columbus, Kan., 1918.

OSCAR W. ALM, M. A., Principal of Junior Training High School.

A. B. University of Nebraska, 1917; M. A. Columbia University, 1918; Diploma, Superintendent of Schools, Teachers' College, Columbia University, 1918; Phi Beta Kappa, University of Nebraska, 1917; Instructor in Psychology, State Manual Training Normal School, Summer, 1919; Principal Junior Training High School, State Manual Training Normal School, 1919—.

JOHN H. BOWERS, PH. D., LL. B., Associate Professor of History.

A. B. and LL. B., West Virginia University; Graduate Work at Ohio Wesleyan and at Chicago University; A. M. and Ph. D., Illinois Wesleyan; City Superintendent, Elizabeth, Pa., Waukon, Iowa, and Covington, Tenn.; Teacher State Normals of West Virginia, South Dakota and Wisconsin; Ten Years Dean of School of Education, Oklahoma A. and M. College; State Manual Training Normal, 1919—.

FRANK DEERWESTER, A. B., PD. M., PD. D., Associate Professor of Education.

A. B., Butler College; B. Di. and M. Di., Warrensburg Normal School; Pd. M. and Pd. D., New York University; Special Student of Psychology and Education, Harvard, Jena and Berlin; Principal, Adrian, Mo., 1889-1891; Department of Pedagogy, Normal School, Warrensburg, Mo., 1892-1905; Department of Education, Normal School, Bellingham, Wash., 1907-1917; Exchange Professor of Psychology, Normal School, Fitchburg, Mass., 1916-1917; Psychological Examiner, U. S. A., 1917-1918; State Manual Training Normal, 1919—.

EVELYN JOAN METZER, Assistant Professor of Home Economics.

Graduate of Chicago Art Institute, 1909; Postgraduate Work at New York University, 1914-1915; Instructor in Design, University of Arkansas, 1910-1919; Assistant Professor of Drawing, State Manual Training Normal School, 1919—.

NORA NEAL, Assistant Professor Piano.

Teacher's Certificate and Graduate of the American Conservatory, Chicago; Pupil in Piano of Heniot Levy, Theory, Hubbard William Harris, Victor Gorwood, and John J. Hattstaedt; studied organ with Sara Laurence Beals, Chicago; won two gold medals for excellence in piano; taught piano and organ for three years in Kansas Wesleyan College of Music, and held position of organist in the First Methodist Episcopal Church, Omaha; Piano Instructor, State Manual Training Normal School, 1919—.

* **HENRIETTA PRIBNOW, B. S.,** Assistant Professor of Home Economics.

Student Beloit College, Beloit, Wis., 1907; Diploma, Boston School of Domestic Science, Boston, Mass., 1910; Dietitian, Battle Mountain Sanitarium, Hot Springs, S. Dak., 1911-1913; Instructor of Household Arts, Wartburg Teachers' Seminary, Waverly, Iowa, 1914-1916; Supervisor of Household Arts in Public Schools, Oshkosh, Wis., 1918; B. S. and Teacher's Diploma, Teachers' College, Columbia University, 1919; Assistant Professor of Home Economics, Kansas State Manual Training Normal School, 1919—.

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* On leave of absence.

Agnes Saunders, A. B., A. M., Professor of Home Economics, and Joint Director.

A. B. Colorado State Teachers' College, 1912; Instructor, Colorado State Teachers' College, 1912-1914; Head of Department of Food, and Dietitian, Utah Agricultural College, 1914-1917; A. M. Columbia University, 1918; State Supervisor of Home Economics, Maryland, and Acting Dean of Home Economics, Maryland State College, 1918-1919. Joint Director of Home Economics, State Manual Training Normal School, 1919—.

G. W. Weede, B. S., D. D. S., Director of Physical Education and Athletics for Men.

B. S. Cooper College, Sterling, Kan., 1901; D. D. S. University of Pennsylvania, 1906; Graduate, Peeso's Postgraduate School, Summer, 1907; Football Coach, Washburn College, Topeka, Kan., 1906-1909; Director of Athletics, Cooper College, Sterling, Kan., 1910-1917; Y. M. C. A. Director of Athletics, Camp Funston and Fort Riley, 1918; University of Illinois Summer School for Physical Directors, 1919; Director of Physical Education and Athletics for men, Kansas State Manual Training Normal, 1919—.

[*] J. R. Wells, B. S., High School Department of Biology.

Life Certificate, State Manual Training Normal, 1915; Special Work in University of Chicago, Summer School, 1915; Bachelor of Science, State Manual Training Normal, 1919; Student Assistant in Department of Biology, State Manual Training Normal, 1913-1914-1915; Head of Department of Biology, Montgomery County High School, Independence, Kan., 1916, 1917, 1918; High School Department of Biology, State Manual Training Normal, 1919—.

Eva Edwards, Assistant Registrar.

Attended Weir, Kan., High School, and graduated from the State Manual Training Normal College High School, 1917; Completed Stenographic Course Pittsburg Business College, 1917-1918; Stenographer, Registrar's Office, State Manual Training Normal College, 1918; Assistant Registrar, State Manual Training Normal College, 1919—.

A. T. Dunham, B. S., B. Met., Associate Professor of Chemical and Physical Sciences.

B. S. University of Missouri, School of Mines, 1916; B. Met. Oklahoma School of Mines, 1920; 1916-'17, Mining and Metallurgical Practice, Butte, Mont.; 1917-'18, Teacher Central High School, Birmingham, Ala.; 1918-'19, Assistant Director of Army Vocational Training School; University, Alabama, Spring and Summer, 1919; Vocational Organization, City of Indianapolis, Ind.; 1919, Professor of Mining, Oklahoma School of Mines; State Manual Training Normal, 1920—.

Paul J. Alyea, Student Assistant in Physical Education.

Atchison High School, 1916; Atchison Y. M. C. A. Assistant Secretary, 1918-'19; State Manual Training Normal, 1919—.

Elsie Leitch Bowman, Associate Professor of Drawing and Applied Arts.

Graduate from Academic Department of Chicago Art Institute in 1903; one year post graduate work, 1904; Teacher Saturday Juvenile Classes Chicago Art Institute for two years; Diploma Applied Arts School, Chicago; Attended Prang Summer Schools; two summers of travel and study in Europe; Assistant Art Department Oshkosh Normal School; entire charge of department for two Summer Sessions; Supervisor of Drawing, Pueblo, Colo.; Teacher in Summer School, Emporia Normal, 1919; State Manual Training Normal, 1920—.

Elizabeth P. Moulton, Assistant Professor of Biology.

Graduate Brown University, Providence, R. I., 1914; Assistant Curator Roger William's Park Museum, Providence, 1914-1916; Postgraduate work in Biology and Education, Brown University, 1916-'17; Trained as Science Teacher, Technical High School, Providence, 1917-'18; Assistant Professor of Biology and Nature Study, Iowa State Teachers' College, 1918-'20; Assistant Professor of Biology, State Manual Training Normal School, 1920—.

H. H. Hall, A. B., Assistant Professor Biology.

Life Diploma, State Teachers' College, Cape Girardeau, Mo., 1905; B. Pe. State Teachers' College, Cape Girardeau, Mo., 1906; Superintendent of Schools, Osage City, Mo., 1905-1906; Superintendent of Schools, Eureka, Mo., 1906-1907; Superintendent of Schools, Baden Station, St. Louis County, St. Louis, Mo., 1907-'13; A. B. Missouri University, 1912; University of Michigan, 1914; Manager Stock and Fruit Farm, Berger, Mo., 1914-'16; Graduate student Missouri University, 1916; Superintendent City Schools, LaCrosse, Kan., 1916-1918; Head Department Chemistry and Agriculture, Joplin High

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[*] On leave of absence.

School, and leader Boys and Girls Agricultural and Poultry Clubs, Joplin, Mo., 1918-'20; Winner all State, Blue Ribbon in Poultry, 1920; Associate Professor of Biology State Manual Training Normal School, 1920—.

H. V. Hartman, Assistant Professor of Industrial Arts.

Technical training in the State Manual Training Normal, 1913-'17; two years in the Electrical Department of Kansas City Southern Railway Company, Pittsburg; two years practical garage experience; Instructor in Manual Training in Crawford County High School, Cherokee, for two years; two years Instructor in Auto Repair and Mechanics in Labette County High School, Altamont; Instructor in Automobile Mechanics, State Manual Training Normal, 1920—.

Louise B. Jordan, Ph. B., Assistant Professor of Home Economics.

Ph. B. and Phi Betta Kappa, University of Chicago, 1917; Instructor in Household Art, Central High School, Duluth, Minn., 1917-1920; Instructor, South Dakota State College, Brookings, S. D., Summer, 1918; Instructor in Household Art, State Manual Training Normal, 1920—.

Goldie Ethel Avery, Recording Clerk.

Attended Fayetteville Arkansas High School and graduated from the State Manual Training Normal College High School, 1918. Recorder, Registrar's Office, State Manual Training Normal College, 1920—.

Jane Cape, B. S., Assistant Professor in Home Economics.

B. S. University of Wisconsin, 1914; Assistant in Home Economics, Kansas State Agricultural College, 1914-1916; Instructor, ibid, 1916-1918; Assistant Professor in Nutrition, University of Cincinnati, Cincinnati, Ohio, 1918-1920; Assistant Professor in Home Economics, State Manual Training Normal, Summer Session, 1919; Assistant Professor in Education, University of Pennsylvania, Summer Session, 1920; Assistant Professor of Home Economics, State Manual Training Normal, 1920—.

Lois L. Goff, A. B., Y. W. C. A. Secretary.

Missouri University, 1918; School of Social Economy and Family Case Works; Associated Charities, St. Louis, Mo., 1919; National Training School of the Y. W. C. A., New York, 1920; State Manual Training Normal School, 1920—.

Elizabeth Helen Fleeson, M. A., Assistant Professor of Biology.

A. B. University of Kansas; M. A. University of Kansas; Sigma Xi, University of Kansas; Bacteriologist University Health Service, University of Kansas, 1915; Bacteriologist, New York State Board of Health Laboratory, 1916; City Bacteriologist, Wichita, Kan., 1917; Assistant Director, University Health Service, University of Minnesota, 1918-'19; State Manual Training Normal, 1920—.

Madge M. Locke, Assistant Librarian.

Graduate Erie High School, 1918; two years work at Kansas State Agricultural College, Manhattan, Kan.; Assistant Librarian State Manual Training Normal, 1920—.

Marjory Jackson, Instructor in Voice.

Graduate of Laurence Conservatory, Appleton, Wis.; Voice lessons under Carl J. Waterman, Appleton, Wis., and Elizabeth Gilbert, formerly of Laurence Conservatory, now of S. M. T. N.; ten years piano under various teachers; member Pi Chapter Mu Phi Epsilon, National Musical Sorority; course includes vocalises and the art of singing as given by Miss Gilbert; State Manual Training Normal, 1920—.

Helen Clare Gibson, Instructor in Piano.

Life Certificate State Manual Training Normal, 1912-'15; Piano, Organ, Voice with T. Merrill Austin, Monmouth College, Illinois, 1916-'17; Piano with Ernesto Berumen, and Piano Accompanying with Frank LaForge, New York City, 1920; State Manual Training Normal, 1920—.

Agnes M. Allender, Primary Critic Teacher.

Kindergarten Diploma, Iowa State Teachers College, 1916; Critic Certificate, Iowa State Teachers College, 1920; Room Teacher, Iowa State Teachers College, 1918-'20; State Manual Training Normal School, 1920.

Elizabeth A. Lathrop, A. B., Assistant Professor of English.

A. B. Milwaukee Downer College, 1902; Graduate Student at the University of Chicago, 1903; also summers of 1909 and 1916; Student at University of Wisconsin, summers of 1914 and 1918; Teacher of English in the High School at Wanson, Wis., 1903-1906; in the High School at Bradhead, Wis., 1909-1913; Assistant in the Green County Normal at Monroe, Wis., 1913-1914; Teacher of English in the High School at Fargo, N. Dak., 1914-1916; Head of English Department of Fargo High School, 1916-1920; Assistant Professor of English, Kansas State Manual Training Normal, 1920—.

Lawrence Everett Curfman, B. S., Assistant Professor of Mathematics and Applied Mechanics.

B. S. in Mathematics and Physics, University of Illinois, 1901; B. S. in Civil Engineering, University of Illinois, 1905; engaged in railway, street railway and irrigation work, 1905-1909; city engineer of Pittsburg, Kan., 1909, to September, 1920; Major and Lieutenant Colonel, 314th Engineers, Camp Funston, and in France, September 1918, to December, 1919; State Manual Training Normal School, 1920—.

May G. Long, Director Physical Education for Women.

Iowa State Physical Training Certificate; Trained in Universities of Minnesota, California and Columbia, New York City; Supervisor Physical Training Public School, Mason City, Iowa, 1902-1909; Everett, Wash., 1909-1920; Assistant in Physical Education, University of Washington, Summer Session, 1918; Director Physical Education for Women, State Normal School, Bellingham, Wash., Summer Session, 1919-1920; State Manual Training Normal School, 1920—.

Regina Frank, Assistant Director of Physical Education for Women.

Graduate of Washington State Normal School, State Manual Training Normal, 1920—.

Ann Helen Carlton, Assistant Librarian.

Life Certificate, State Manual Training Normal, 1920; Teacher in Grades, Litchfield, Kan., 1918-1919; Assistant Librarian, State Manual Training Normal, 1920—.

Bessie L. Ashton, B. S., M. S., Assistant Professor of Geography.

Diploma and State Life Certificate, Western State Normal, Kalamazoo, Mich., 1905; B. S. University of Chicago, 1911; M. S. University of Chicago, 1916; Instructor of Mathematics, High School, Kalamazoo, Mich., 1906-1909; Assistant Professor of Geography, State Normal School, Valley City, N. Dak., 1911-1915; Professor of Geography, State Normal School for Women, Farmville, Va., 1916-1920; Assistant Professor of Geography, Iowa State Teachers' College, Summer Session, 1920; State Manual Training Normal, 1920—.

John R. Pelsma, B. S., A. B., Ph. M., M. D., Professor of Public Speaking.

Teacher's Diploma, Northern Indiana Normal School, 1899; B. S. Valparaiso College, 1901; A. B. DePauw University, 1908; Ph. M. University of Chicago, 1910; M. D. American College of Medicine and Surgery, Chicago, 1905; Student, Curry School of Expression, Skinner School of Oratory, University of Wisconsin, University of Nevada, Harvard University; Teacher Government Indian School, Principal high schools, Superintendent of schools, Kansas, Indiana, Illinois, Iowa, Nevada; Instructor Public Speaking, University of Wisconsin, summers of 1911 and 1912; Professor of Public Speaking, Southwestern University (Texas), 1912-'13; Instructor Public Speaking, University of Texas, 1913-'16; Professor of Public Speaking, Oklahoma A. &. M. College, 1916-'20; Chautauqua Lecturer seasons of 1919 and 1920; Founder of Theta Alpha Phi national dramatic fraternity; author of "Lessons in Public Speaking" and "Oral Reading and Public Speaking"; State Manual Training Normal, 1920—.

Jane M. Carroll, B. S., Primary Critic Teacher.

Life Certificate, State Manual Training Normal, 1916; Special work in University of Chicago, Summer School, 1917; B. S. State Manual Training Normal, 1920; Primary Teacher, Wichita, Kan., 1917-'20; Assistant Professor in Department of Methodology, State Manual Training Normal, Summer Session, 1918, 1919, 1920; Primary Critic Teacher, State Manual Training Normal, 1920—.

Mary E. Andrews, A. B., Assistant Professor of English.

A. B. University of Kansas, 1913; Graduate Student, University of Wisconsin, Summer 1916 and 1917; Graduate Student, University of Kansas, Summer 1918, 1919, 1920; head of Department of English, High School, Seneca, Kan., 1913-1919; Head of Department of English, High School, El Dorado, Kan., 1919-1920; State Manual Training Normal School, 1920—.

Ralph W. Erskine, Assistant Professor Industrial Arts.

Machinist Apprentice with Centerville Foundry and Machine Company, Centerville, Iowa; Machinist for Rock Island railroad two years at Davenport, Iowa; Machinist for Rock Island Arsenal one year at Rock Island, Ill.; Machinist and Machine Foreman for Kansas City Southern Railroad fourteen years; Machine Shop Instructor for State Manual Training Normal one year up to 1919; General Foreman for Kansas City Southern railway from January 1, 1919, to August 1, 1920, at Shreveport, La.; Machine Shop Instructor, State Manual Training Normal since September 1, 1920.

Nelle Wren Ayers, A. B., Intermediate Critic Teacher.

A. B. Iowa State Teachers' College, 1919; Critic Certificate, Iowa State Teachers' College, 1919; Room Teacher, Iowa State Teachers' College Training School, 1917-'19; Assistant Critic, Iowa State Teachers' College, Summer 1919; Critic Teacher, Montana State Normal College, 1919-'20; State Manual Training Normal, September, 1920.

CHARLES FOSTER KOPP, B. S., Assistant Professor in Industrial Arts.

1899, Diploma in Architectural Drawing, three-year evening school course, Ohio Mechanics Institute, Cincinnati; 1903, B. S. in Electrical Engineering, University of Cincinnati; 1903-1910, Instructor in Architectural and Mechanical Drawing, Hebrew Technical Institute, New York; also Instructor of evening school classes in Drawing, Mathematics and Electricity at Navy Y. M. C. A., Brooklyn; 1910-1912, Draftsman and Experimental Assistant on Patent Office Work and Development in Player Piano Department of Baldwin Piano Co., Cincinnati; 1912-1915, Draftsman, then Designer of Hydraulic Machinery for the Hydraulic Press Mfg. Co., Mt. Gilead, Ohio, also Architect and Engineer for their New Erecting Shop; 1915-1918, Field Organizer in Engineering Extension Work, Pennsylvania State College; interviewing employers, addressing shop meetings and organizing shop classes in Blue Print Reading, Shop Mathematics, etc.; also instructor in Machine Design; 1918-1920, Assistant Maintenance Engineer with B. F. Goodrich Rubber Co., Akron, Ohio; advanced to Assistant General Foreman of Hose Department; also organized and taught shop classes in Drawing, Mathematics and Electricity; State Manual Training Normal, 1920—.

FRANK J. DOBROVOLNY, A. B., Assistant Professor in Physical Sciences.

Student Sioux Falls College, South Dakota, 1917-1918; A. B. in Chemistry Dakota Wesleyan University, Mitchell, S. Dak., 1920; Graduate Student University of Chicago, Spring, 1920; student assistant in Chemistry Dakota Wesleyan University, 1919-1920; instructor in Model School, Camp Grant, Illinois, Summer, 1920; Assistant Professor of Physical Science, State Manual Training Normal, 1920—.

JOSEPH BRADLEY QUIG, B. S. in Chem., Assistant Professor of Chemical and Physical Sciences.

Graduate West Chester, Pa., State Normal School, 1911; Instructor Chemistry, Delaware Watergap High School, 1911-1913; B. S. in Chem. LaFayette College, Easton, Pa., 1917; Commercial Chemist, American Smelting and Refining Co., Perth Amboy, N. J., 1917; Chemical Warfare Service, A. E. F., 1917-1919; Commercial Chemist, Atlas Powder Co., Wilmington, Del., 1919-1921; Assistant Professor of Chemistry and Physical Sciences, K. S. M. T. N., 1921—.

ELMER W. JONES, B. S.

B. S. in Electrical Engineering, Kansas State Agricultural College, 1909; Superintendent Light and Water Plant, Waverly, Kan., 1910; Suprintendent Light and Water Plant, Herington, Kansas, 1911; Electrical Engineering Department, Kansas City Power and Light Company, Kansas City, Mo., 1912-1917; Instructor in Advanced Electricity, Lathrop Trade School, Kansas City, Mo., 1917-1921.

LILLIAN LUEHRS, Ph. B., Assistant Professor History.

Graduate of University of Chicago; Ph. B. degree 1910; two years post graduate work in University of Chicago and Minnesota; Teacher of History in High Schools for twelve years at Watertown, S. Dak.; Fargo, N. Dak.; Miskawaka, Ind.; Minneapolis, South High School; Teaching Fellow at the University of Minnesota, 1920; Campaign lecturer for the Republican Women's Club in Minnesota during political campaign of 1920; Teacher of History, Kansas State Manual Training Normal School, 1921—.

SPECIAL ASSISTANTS.

SUMMER TERM, 1920.

Robert Taft, Chemistry and Physical Science.
John Broadlick, Mathematics.
Pauls Selders, Industrial Arts.
Glenn B. Litton, Geography.
W. D. Armentrout, Education.
Callie Totten, Training School.
Cordelia Essling, Training School.
Ruth Rencenberger, Library.
Florence Curtis, Physical Education.
E. D. Schonberger, Public Speaking.
Thomas E. Wiggins, English.
Ethel Vaughn, Languages.
Anna Allen, Home Economics.
John F. Barnhill, Mathematics.
Bertha Spencer, Industrial Arts.
J. E. Lockwood, Industrial Arts.
C. S. Risdon, Education.
Edward Flottman, Geography.
Sara E. McBride, English.
H. D. Ramsey, Education.
A. G. Coleman, Industrial Arts.

STUDENT ASSISTANTS.

SUMMER TERM, 1920.

Laurence I. Sutherland, Biology.
Agnes Crowe, Mathematics.
Norma Gardner, Librarian.
Leona Taylor, Mathematics.
C. I. Burnett, Biolgy.
Robley Matthews, Biology.
Muriel McFarland, Biology.
Blanche Ingham, Geography.
A. R. Gilbert, Education.
Maybelle Betts, Drawing.
Roy E. Taylor, Chemistry and Physical Sciences.
Rachel Davis, Training School.
Eva Cunningham, Home Economics.
Olive Wohlford, Assistant Dean for Women.
Laura Ward, Assistant Dean for Women.
I. G. Bashaw, Industrial Arts.
Margaret Mitchell, Physical Education.
Lenore Thompson, Library.

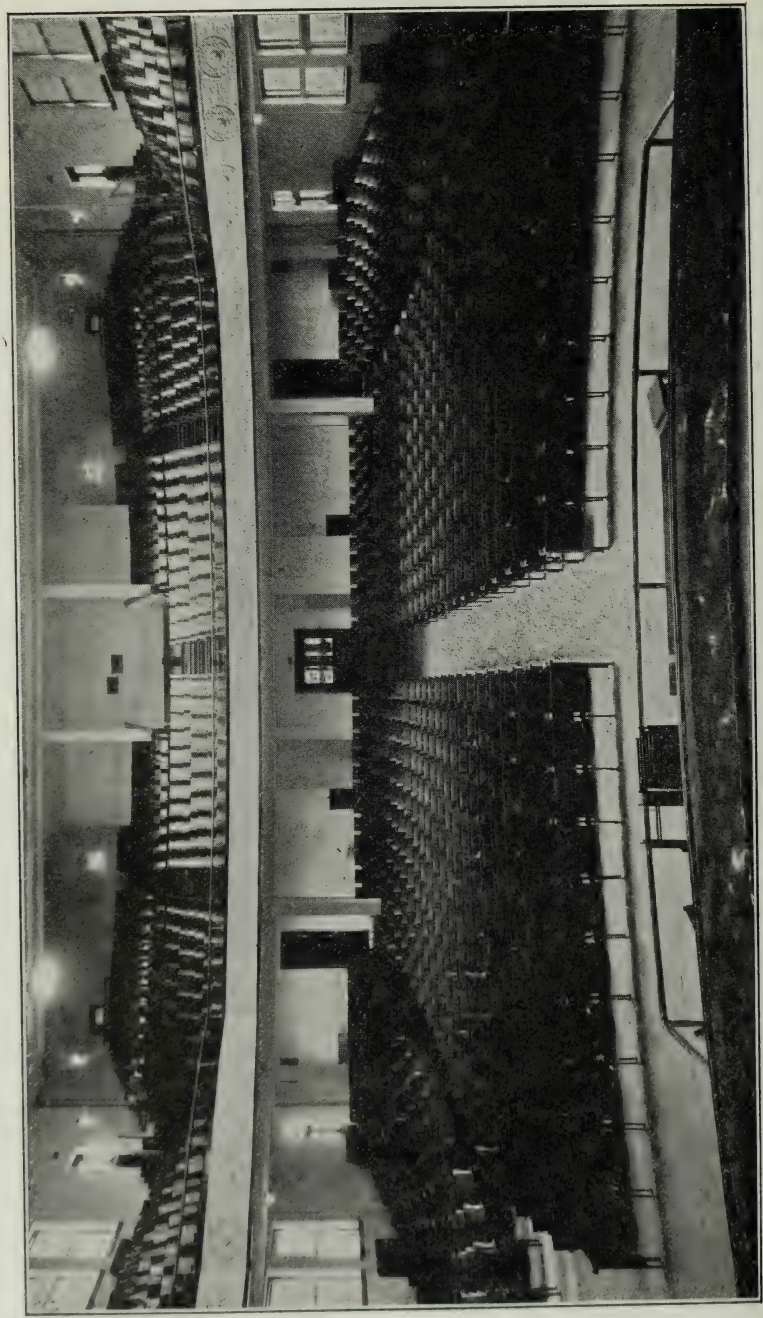
STUDENT ASSISTANTS.

FALL SEMESTER, 1920.

Harold Alyea, Physical Education.
Logan Anderson, English.
Mabel Zena Carl, Mathematics.
Agnes Crowe, Mathematics.
Jack Doty, Mathematics and Industrial Arts.
Buster Ham, Physical Education.
Victor Hiett, Education.
C. L. Hill, Industrial Arts.
Leo Hudiburg, Chemical and Physical Sciences.
Elsie Killough, Physical Education.
Helen Lanyon, Training School.
Robley Matthews, Biology.
Jess Matthews, Physical Education.
Robert Mendenhall, Chemical and Physical Sciences.
Harvey Mullen, Industrial Arts.
Theo Nevius, Library.
John Wiedenman, Biology.
Lysle McKinley, Chemical and Physical Sciences.
John E. Reinecke, Library.
Mabel Johnson, Library.

Vera Cunningham, Secretary to Dean for Women.
Gwen Williams, Stenographer for Extension Department.
Cora Kohler, Assistant General Office.
Gladys Britton, Stenographer for the Departments.
Mavolene Edwards, Assistant General Office.
Billie Burris, Telephone Operator.

J. H. Cappers, Custodian and Head Engineer.
C. F. Robins, Janitor.
W. J. Benton, Janitor.
J. L. Green, Janitor.
M. S. Wiman, Fireman.
William Spendlove, Landscape Gardner.



AUDITORIUM, CARNEY HALL.

General Information.

LOCATION.

Pittsburg, the metropolis of southeastern Kansas, is located 130 miles south of Kansas City. It has four lines of railroad—the Missouri Pacific, Santa Fe, Frisco, and Kansas City Southern—and over 100 miles of interurban railway. It is second to no other city in the state in its accessibility, with more than twenty passenger trains per day and interurban cars every few minutes.

Pittsburg is a city of 20,000, located in one of the greatest industrial sections of the state. There are hundreds of coal mines surrounding the city in all directions, and millions of tons of coal are mined here annually. The main shops of the Kansas City Southern between Kansas City and Port Arthur, Tex., are located here, employing 2,000 men.

Our population is truly cosmopolitan. At a recent reception to the governor he was greeted in thirty-two different languages. While this is true, they are a loyal people. No war measure came to our city that did not "go over the top."

The State Manual Training Normal School is serving the people and state in training teachers and industrial workers to function in the life of society wherever these people may chance to live. At present she has representatives doing efficient work in Educational, Industrial and Social life in almost every country in the civilized world, and her ambition is to become one of the greatest agents in the state in Americanizing, not only our immediate community, but spreading that sentiment to the uttermost parts of the earth.

Pittsburg is also a city of fine homes, paved streets, and has one of the finest natural parks in the state. All that she is and all that she has she lays at the feet of the students who attend the State Manual Training Normal School.

MATERIAL EQUIPMENT.

The Normal occupies a campus of fifty-five acres adjoining the city upon the south. This piece of land is admirably situated for our institution. It is being put into condition very rapidly. There are located upon this campus at the present time five splendid permanent buildings, and three large temporary buildings.

RUSS HALL.

This building was erected in 1907 and 1908. It was destroyed by fire in June, 1914, and has been rebuilt and thoroughly equipped. Everything that could be done to make it a more substantial, beautiful and serviceable building has been done. This building now has seventy-five rooms, less the corridors and halls. More than three-fourths of the building is fireproof. Considerable change was made in the exterior and in the interior, especially the top floor, in this rebuilding. Our halls and corridors are beautifully tiled, and the grand stairway at the front entrance, leading to the second floor, is a work of art and beauty, being constructed of the best grade of marble.

In this building are to be found the Administration Offices, the College of Liberal Arts and a portion of the training school.

INDUSTRIAL ARTS BUILDING.

This building covers more ground space than Russ Hall. It is used exclusively for all work in Industrial Arts. Here are excellent shops equipped with the latest and best machinery that can be had, and doing all kinds of woodwork, sheet metal, forge, foundry, machine shop, automobile, and electrical work. It is well lighted and ventilated, and furnishes an opportunity for these various lines of work unequaled by any other in the West.

POWER AND HEATING PLANT.

The power and heating plant is the third of these permanent buildings. It has been designed and located with a view of using it for heating and lighting the several buildings and others which must soon be gathered about it to carry on the work of the institution.

CARNEY HALL.

For several years the institution has been crowded beyond its capacity, the work of Home Economics, Biology, and Physical Sciences being crowded into rooms arranged for academic purposes greatly hampering the instructors in carrying out their high ideals along their respective lines. Through the generosity of the legislature of 1917, an appropriation of $200,000 was made for the purpose of erecting a much needed Science building. Owing to the war, scarcity of labor and difficulty in securing materials, this building was not completed until December, 1919; however, it was sufficiently advanced that at the beginning of the school year 1919-'20 the Departments of Home Economics, Biology and Physical Sciences moved in before it was finished. This building is now complete and is said to be one of the finest educational buildings, if not the finest in the state. Its laboratories have been equipped with the best equipment that could be had. It also has one of the finest auditoriums in the state with a seating capacity of 2,500. The outward appearance is most beautiful, and the interior is equally artistic. The building was named by the legislature as a fitting tribute to the memory of ex-Governor Carney, governor of Kansas, 1863-1865. It is the aim of the institution to have space in this building for a collection of historical relics. Many war relics have already been received, and if you are a friend of S. M. T. N. and have something to contribute to this end we shall be pleased to have it.

TEMPORARY BUILDINGS.

CAFETERIA. We have a large temporary wooden building in which the cafeteria is now located. While this building is a mere temporary structure, it has been fitted up in a most convenient and sanitary manner with the best cooking equipment that could be had and admirably serves the purpose for which it was designed. We are able to feed 1,000 people in a very satisfactory manner.

The management of the cafeteria is under the direct supervision of the head of the Department of Home Economics, thus insuring the selection and preparation of the best kind of food in the best sort of way for our students.

THE BARRACKS. In 1918 when the S. A. T. C. made its appearance upon our campus it became necessary to erect a temporary barracks. Since the disbandment of the S. A. T. C. this building has been converted into a temporary gymnasium and an automobile machine shop. By some additions we have been able to accommodate our young people in their gymnastic work in this building in their indoor games. It also furnishes very good quarters for automobile repair work.

BOARD AND ROOMS.

Excellent table board may be had at $4 to $6 per week in private families or in groups.

A cafeteria operated under the management of the College has capacity to accommodate 800 to 1,000 daily. Meals and lunches are served here at approximate cost, ranging from $3.50 to $5.00 per week.

Many teachers find it both pleasant and profitable to take a cottage or suite of rooms, do light housekeeping, and lunch at the cafeteria. By this method the cost of meals may be reduced to as low as $3.50 per week.

Rooms cost, unfurnished, $2 to $5 the month; furnished, $7 to $10 the month, according to size and convenience. Furnished houses rent from $6 to $18 the month. It is not necessary to engage rooms before one comes. It is more satisfactory to see the rooms before making definite engagements. An extensive list of suitable boarding and rooming places is kept on file in the library at the school to aid students in securing favorable location. Men and women are not expected to room in the same house. In houses where women students are rooming, suitable arrangements for the use of a parlor for the reception of guests must be made.

STUDENT WELFARE.

No subject is given more serious consideration by the faculty than the physical and moral welfare of its students. While a student may have enjoyed a certain privilege in his home which was considered perfectly proper in one's own home, yet the great responsibility assumed in the care and training of the young men and women frequently warrants the Faculty is asking the students to give up some special privilege that has been thoroughly proper in his own home which would not be exactly right when living away from home. Women students do not room in houses where there are men lodgers without permission from the dean for women and the rooms committees.

DEAN FOR WOMEN.

Not only in the matters pertaining to school life, but in all activities which count for general social efficiency, the dean for women takes direct interest in the life of every girl enrolled in the institution. Applications for loans from the students' loan fund to women students are usually made through the dean for women. Parents will find the utmost courtesy and interest shown by the dean for women towards any correspondence which may arise from the solicitude which parents feel when they send their daughters away from home to college.

CHURCHES.

Pittsburg has a fine lot of churches. The leading denominations have well-equipped and beautiful buildings and as fine a lot of ministers as can be found anywhere. These ministers take special interest in the student body and do all in their power to make the very best church environment for students and faculty. A large per cent of our faculty are active workers in these churches, holding positions as teachers and superintendents in the Sunday schools, and thus coöperate in this good work. A prominent minister who has been a college president said he considered the moral atmosphere as good here as any school he knew.

BIBLE STUDY.

For ten years a regular Bible-study class has been conducted by Dean Trout. At first this work carried no credit, but for the past three years the work has been regularly scheduled, assignments made and recitations conducted one hour a week. Students have a rare opportunity in this course, as the instructor is a regular graduate of one of the foremost seminaries of the East. The idea is not to teach dogma and doctrine but to lead the student to understand the great social principles underlying the teaching of the Scriptures, and help to an understanding of the fatherhood of God and the brotherhood of man.

Students now have opportunity to take courses in Christian Evidences, Ethics, Old Testament History, New Testament History, and the Social Teachings of Jesus, all of which is intended to help these young people in forming right opinions and assuming right attitudes toward the Bible and the Christian religion.

THE ALUMNI.

Few institutions, if any, can boast of so large an alumni as S. M. T. N. An institution only fifteen years old with an alumni of 1,480 is something of which we are justly proud. No institution ever had a more loyal bunch than our alumni. They have never failed, either as individuals or groups, or as an association, to do their whole duty toward S. M. T. N. The Alumni Association was organized in 1905 and is engaged in holding reunions at all state and district associational meetings. Where there are sufficient members in any school system they organize S. M. T. N. clubs, and thus make their alma mater felt and appreciated in these communities.

The association holds its annual meetings, at which officers are selected, at the institution on commencement day, at which time a banquet is served. The present officers are: Miss Bertha Lance, president; Miss Maud Skinner, vice-president; Mrs. Fred M. Campbell, secretary.

STUDENT ORGANIZATIONS.

ATHLETICS.

Intercollegiate and intramural athletics are carried on by the departments of Physical Education. Intercollegiate athletics are supervised by an Athletic Council composed of five Faculty members and five students. The institution is a member of the Kansas Intercollegiate Athletic Conference. Schedules are arranged with other colleges in football, basket ball, tennis, and track athletics. No intercollegiate schedule is maintained in baseball, but this sport is maintained as an intramural activity.

Interclass and intramural tournaments and leagues are held for both men and women students in basket-ball, volley ball, and baseball. There are no intercollegiate or interschool contests for women students.

ATHLETIC FIELD.

The facilities for outdoor athletics and general recreation are first-class. The new athletic field, on which $3,000 has been expended, has been available for use since the spring of 1918. The plans for the next two years call for the expenditure of $7,000 in the further improvement and extension of the grounds.

A temporary grand stand seating 1,500 spectators is now being used, but it is the plan at an early date to replace the same with a permanent grand stand with accommodations for 2,500 spectators.

The field has a quarter-mile track with a maximum width of twenty feet, with the inside and outside edges marked with concrete curbs. The track has two coats of cinders. Cinders will be added each year to the cinder path and the whole course ultimately drained with tile.

Inside the space marked by the inner curb of the track there is an area 430 feet long by 207 feet wide. The surface of this space is practically level, except for the crowning effect produced by having the middle of the field higher than the edge, which insures good drainage of the playing surface.

Further plans for intramural sports make inadequate the four tennis and four volley ball courts now occupying a central location on the campus. Several additional courts will be located on the athletic field proper and a commodious field for the women to play soccer football and hockey will be installed soon.

GYMNASIUMS.

Until the needed funds for a new gymnasium are appropriated the indoor athletics for men will be taken care of on a temporary floor made available in 1919 by remodeling one of the S. A. T. C. barracks. A playing space of 40 feet by 80 feet is thus provided with no posts or obstructions. Elevated seats on one side of the court accommodate 500 spectators.

The women have a separate gymnasium in Russ Hall 50 feet by 50 feet. It is equipped for the general gymnastic and floor work carried on by the regular classes. Inter-class games are played on the barracks gymnasium floor.

"M" CLUB.

This club is composed of men who have the honor "M" in athletics. Its purpose is to better the athletic interests of the college.

WOMEN'S ATHLETIC ASSOCIATION.

Membership in this organization is open to all women students who through health activities and athletics win 100 "points." The association has charge of all tennis tournaments and interclass games; the annual field day; the awarding of numerals and the College "M." Interclass games in the following are played: soccer, hockey, volley ball and basket-ball.

"THE GORILLAS."

A volunteer crowd of the boys who are banded together to instill pep into the students, business men and team before each athletic contest.

"THE BOOSTERETTES."

A similar organization of the girls who refuse to let the fellows outclass them in pep, enthusiasm or noise.

LITERARY SOCIETIES.

There are two well-organized literary societies, each having a well-furnished and equipped room for its meetings. They are the Manus Verez and Porterean societies. The purpose of the organization is to furnish its members an opportunity to develop along literary lines and make this line of work of value to the community life where they teach. The programs are of a miscellaneous character, combining oratory, music, readings, debates, short stories, and the like. Besides the literary work of these societies, they furnish frequent and splendid opportunities for the development of the social life of the student.

DRAMATIC ART CLUB.

This organization is composed of the students who are especially interested in dramatics, and furnishes an opportunity for the cultivation of the highest type of expression. The organization is for the student and not the student for the organization. The best professional plays, mostly manuscript, are produced in a truly professional manner. The plays are cast not according to the merit of the student but according to his needs. Through this democratic spirit, together with a cultured and refined atmosphere at its monthly meetings and formal banquets, the club has become a very real factor in the life of S. M. T. N.

THE FORUM.

This is a student organization open to all students of S. M. T. N. who desire a knowledge of argumentation and some practice in debate. After the principles of argument, briefing, etc., are set forth by an instructor of public speaking at the beginning of the term, the student proceeds to make their application to various live questions of the day. The club holds its regular meetings on the first and third Tuesdays of the month at seven o'clock p. m. From this club our debate teams are chosen. The officers of this club, together with three members of the

Faculty appointed by the president of the institution, constitute the Oratorical Council, which has charge of all contests in debate and oratory.

Y. W. C. A.

The essential ideal of the Association is association. The association in the College assumes a special form which binds students in fellowship with young women of this continent and through them with those in colleges and universities of the world.

The ultimate object of the Association is the development of Christian character.

It works for all-around development of health, education, social life and morals for every girl on the campus and gives expression to those standards in an active Christian attitude toward all campus activities and problems.

Every Tuesday morning there is a meeting which is for the spiritual growth of every girl and gives her an inspiration for high ideals.

Health standards are set high through discussion groups, movies and demonstration. Recreation is afforded through hikes, plays, parties, also the annual breakfast for senior girls and joint Y. M.-Y. W. parties.

Service to others is given in assisting in finding rooms for students, visits and flowers to the sick, helping in any community work possible, assisting in the support of a Y. W. C. A. secretary in China. A room is open at all times for the girls of the College.

Bible and Mission Study groups are formed for discussion of social Christianity, religions and customs of girls in other countries—personal Christian standards.

Officers: Agnes Crowe, president; Beulah Shockey, vice president; Zoe McGonigle, secretary; Margaret O. Mitchell, treasurer.

Cabinet: Lea Guthridge, Claire Toy, Mildred Congdon, Anne Clarke, Hyacinthe Matney, Gladys Jenkins. Lois L. Goff, general secretary.

MUSICAL ORGANIZATIONS.

The principal organizations are the Male Glee Club, Polymnia Club (a girls' organization), the orchestra, and the band. These organizations are very popular, both in the school and outside. They meet regularly twice weekly for rehearsal, and during the school year present several concerts. The active membership of the organization is necessarily limited and is chosen from the best talent of the school.

MUSIC FESTIVAL.

For the past five years the institution has organized and drilled a great chorus of from three to five hundred voices for the purpose of putting on a special week of music festivities. We have always had during this festival some special musical attraction outside the institution. For three successive years we had the Minneapolis Symphony Orchestra. Last year we presented the Metropolitan Quartet, composed of Madames Alda and Lazzari and Messrs. DeLuca and Martinelli.

The music lovers of adjoining cities have organized choruses under the direction of the head of the Department of Music, and these have been merged with our great student chorus, making the annual musical festival second to none in the West.

In addition to this great chorus we have always selected artists for the solo work, thus enriching the splendid feast of good things musically. For the festival of 1921 greater artists will be secured than we have heretofore had. Some of these have already been engaged, and with great care we are selecting the others. Last year we added the new feature of an interstate high-school musical contest which was a success far beyond our expectation. We shall continue this feature which furnishes young people, either as soloists or musical organizations in our high school, an opportunity to know what is being done in other high schools in other states.

THE BAND.

The student body maintains a splendid band under the direction of Prof. Walter McCray, who is well known not only as a musician of rare ability in the direction of all sorts of music, but a specialist as a band leader. This furnishes an excellent opportunity not only for young people who desire to continue their knowledge of band music, but for those who may desire to begin the study of some band instrument.

It may be of interest to the students to know that for the past four years our director has had complete charge of the municipal band of this city and has built up one of the best organizations in the state.

ORCHESTRA.

We have an orchestra under an expert leader. The progress this organization has made since its organization is phenomenal. Students musically inclined have ample opportunity for the cultivation of their talent.

OTHER ORGANIZATIONS.

INDUSTRIAL ARTS SOCIETY.

During the year of 1915 the instructors interested in the industrial subjects, together with a number of students who were likewise interested in these subjects, formed an organization known as the Industrial Arts Society. The purpose of such society, as stated in the constitution, is to encourage the advancement of industrial education by meeting for the discussion of industrial subjects, by the publication of such matters as may be deemed desirable, by establishing fraternal relations among the friends of industrial education, and by granting the privilege of membership to such students as during their course have given special promise of future achievement.

SCHOOL PUBLICATIONS.

THE MANUALITE.

The Manualite is published monthly during the school year by the students and alumni of the school. There is an editorial staff of eight students, elected annually.

THE TECHNE.

The purpose of this magazine are: To set forth the distinctive work of the State Manual Training Normal; to publish papers that will be of interest to its readers; to assist teachers to keep in touch with the development in their subjects; to foster a spirit of loyalty that will effect united action among the alumni and former students in promoting the best interests of the institution. The magazine is published every month except August and September. Alumni, teachers and friends of the Normal are invited to send communications on such subjects as fall within the scope of the magazine to the committee in charge. Address communications to *The Techne*, State Manual Training Normal, Pittsburg, Kan. It is sent free to all alumni and students of the State Manual Training Normal, and to teachers, school officials and citizens on request.

THE KANZA.

For several years the Junior class has had charge of the editing and publishing of *The Kanza*, the annual of the school. This class has brought some excellent books to our student body, and this year will be no exception. The experience gained by those interested in putting out this splendid book is of such a nature that it will serve the student in coming life as a helpful means of understanding the scholarship and mechanical ability required in the preparation of such periodicals, which may serve in a very practical way for them in days to come.

WORKING FOR EXPENSES.

The State Manual Training Normal, being located in a city larger than that of the average state institution, and being also in a district which is thoroughly industrial, a splendid opportunity obtains at all times for many students to earn a part or all of their expenses, by working in homes, stores, factories, offices, garages, etc. In past years hundreds of students have helped themselves in this manner. In truth, some have begun without a week's expenses provided for, and have, by industry and frugality, completed their course and graduated with money in their pockets. We have a Faculty committee which coöperates with its students in this matter.

STUDENTS' LOAN.

A movement has been started by the Women's Federated Clubs to assist worthy and needy young people in a financial way. A certain sum will be loaned to approved students at a low rate of interest.

FEES.

All fees except hospital fees are to be paid at the beginning of each semester before admission to class.

Hospital. Each school year, or fraction thereof, all students in the institution pay $1 per year to be used as a fund for the care of the sick. This fee will not be refunded.

NONRESIDENT FEES. Nonresidents will pay, in addition to other fees, a fee of $30 per year, payable in advance, by terms, as follows: $15 per term of twenty weeks; $10 for summer term of ten weeks. These fees will not be refunded.

INCIDENTAL FEE. Each student will pay a fee of $7 per semester, or fraction thereof, and the same for the Summer Session. Students taking work in the sciences, manual training, and other training where a considerable amount of material is used, individually, will be charged the actual cost of the material used by them.

CORRESPONDENCE WORK. Students taking work by correspondence pay fees indicated in special correspondence circular.

MUSIC. For fees in the music department see under that head.

EXAMINATION. Students taking special final examinations pay a fee of $1 for each examination taken. Students regularly enrolled pay the regular examination fee of $1 for the privilege of taking the county examination under the supervision of the officers of the Normal School. No credit is given for certificates of enrollment in county institutes.

HOSPITAL FUND. This fund is provided by the fee of $1 per year paid by all students in the college and secondary courses. It is used to pay salary of the head nurse, for such emergency hospital supplies as are necessary, and for unavoidable expenses required for proper care of the sick. The hospital fund has met with generous approval and has contributed to better general health, and to the comfort of the students.

TYPEWRITER. Students taking typewriting pay a special fee of $1.50 per semester for use of machine.

LABORATORY FEE. A small fee to cover cost of material is charged each student pursuing laboratory courses.

THE SUMMER SCHOOL.

THE SUMMER SCHOOL opens immediately after the close of the school year. Practically all courses outlined in this catalogue are given either in full or part during the Summer School. Most of the students are teachers of experience who wish to prepare themselves more fully for their work. Also many teachers desiring to advance the grade of their county certificate may carry such work as they desire to pass county examination in, and thus qualify themselves and at the same time secure credit toward a state certificate. Also, noted educators give special courses and lectures for the benefit of the Summer School students. Owing to the fact that a large number of superintendents of the leading school systems of the state attend our Summer Session a splendid opportunity is afforded for teachers and superintendents to become acquainted. For further information see section VII, page 175.

REGULAR LECTURE COURSE.

Under the direction of a Faculty committee a general lecture course is put on each year. This course is not the old-time type of lecture course. It is the policy of the committee to select the very choicest attractions to be had, thus assuring the student body of the very best talent and most desirable things from the standpoint of both entertainment and instruction.

Students are admitted to all these lecture-course attractions on the student activity ticket.

SPECIAL FEATURES.

During the year prominent educators and leaders are invited in to lecture to the student body. The institution also has a very fine motion-picture machine, which furnishes entertainment and instruction along the special lines of work of the various departments.

TEACHERS' APPOINTMENT BUREAU.

The Teachers' Bureau consists of a committee of the Faculty, which seeks to place each graduate of the institution in the position best adapted to his qualifications. These qualifications are determined by a careful examination of the student's complete record as shown by his work done, not only in the Training School but also in the various departments of the College. The Bureau seeks in this way to do justice to every student, and is able to give exact and discriminating information to school officials seeking teachers. During the current year the work of the Bureau has been extended to include all graduates of the College teaching in the state, with the view of giving them all possible assistance in advancing their professional interests. Full and confidential information will be sent school officials concerning candidates. It is our policy not to send out general letters of recommendation for indiscriminate use, but to recommend a candidate for the particular position that he is qualified to fill. A large number of the members of the graduating classes have had considerable experience in teaching besides that obtained in the Training Department. There are among our students and graduates persons admirably fitted for the various high-school principalships and superintendencies. School authorities are invited to visit the Normal and see the students at work, and make selections of teachers after a personal interview. All letters of inquiry will receive careful attention.

EXTENSION WORK.

The State Manual Training Normal School now has a well-developed and well-organized system of extension work, which is proving of great value to teachers in service and to others contemplating entering the profession. The work is so planned that students outside the institution, under certain limitations, can pursue the same courses of study and receive the same credit as those within the institution. By this means industrious students are enabled to increase their efficiency while in service, and also reduce the time of residence required to secure completion of a course in the institution, but no amount of extension work will be accepted as a substitute for the minimum residence requirement.

The location of the Normal in the center of a network of interurban and steam railways, furnishing students and Faculty easy and rapid means of transportation, has greatly contributed to the success of this character of work. During the current year more than 700 students, teachers in service, have received instruction from the institution. Superintendents accept this work in lieu of professional work required, and speak in the highest terms of its value in improving the teaching force of the city or community.

Extension work is offered by three different methods—correspondence work, class extension, and Saturday work.

CORRESPONDENCE WORK.

Where the nature of the subject matter will permit, and where extensive laboratory work is not required, courses of instruction will be offered by correspondence. The student will furnish outlines, with review topics, and furnish such other evidence that the course is mastered as the head of the department may require.

CLASS EXTENSION.

Under this plan classes of twelve or more are organized and a member of the Faculty meets the class regularly every week or every two weeks at the place in which the class is organized. Outlines and reviews are required as in regular correspondence work, with the additional advantage that the student comes in personal contact with the teacher. This character of work is regarded as meeting residence requirements within prescribed limitations. This plan is proving very attractive and effective. Classes in more than thirty cities and towns have been organized the past year.

SATURDAY WORK.

Courses in which laboratory work is required are offered to such students as find it possible to reach the institution on Saturday and spend the day in the laboratories. The laboratories are open and competent instructors are provided for this work.

CREDIT.

The extension courses offered, as outlined above, are identical with the courses offered to students within the institution, and by the same members of the Faculty, and the student in extension work meets the same standards and degree of efficiency in his work as the student enrolled in the school, and receives the same credit for his work.

INFORMATION.

A special extension bulletin, giving list of courses, credit offered, limitations of work that can be taken, and other detailed information concerning this phase of work, will be issued early in September of each year. Students interested should write directly to the registrar for this bulletin.

AMOUNT OF WORK.

No person will be permitted to carry more than five hours per semester by correspondence, class extension, or Saturday work.

LECTURES.

The Faculty of this institution has always been ready to coöperate with the superintendents of smaller cities in aiding them to give entertainment to their people. In some instances a complete lecture course has been furnished by our Faculty.

In addition to this sort of work we are ever ready to send a speaker to all gatherings of teachers to assist in their work. We want superintendents and teachers to feel free to call on us at any time, anywhere, and they will find a ready response. Our institution touches a large field of advanced educational thought of the most practical sort, and we want to serve you. By communicating with the president satisfactory arrangements can be made.

EXAMINATIONS FOR ADVANCED STANDING.

Students may, upon good and justifiable grounds, be permitted to take examinations for advanced standing, by the permission of the Accrediting Committee and the head of the department in which the examination is to be taken, in such subjects as may be agreed upon, it being understood that no student will be permitted to take such examination as would in any way jeopardize the standing of the institution in its affiliated relations.

Aplications for advanced standing should be made at the first entrance of the student to the institution. Students who expect to take examinations for advanced standing or submit credits or credentials from other institutions for advanced standing should, if possible, send these credentials and evidences of work completed in other institutions to the registrar of this institution before the time of enrollment, and thus save themselves a lot of worry and waiting at the beginning of the semester, when they should be classified and enrolled in their class work. These credentials should be sent two or three weeks before the opening of the semester, that the Accrediting Committee may have opportunity to evaluate them and fix the standing of the student. The Accrediting Committee can give no estimate of the advanced standing of prospective students unless these conditions are complied with.

The committee cannot consider applications for examination for advanced standing which are made later than ten days after matriculation, and if the applicant is permitted to take such examinations, these examinations must be taken not later than the middle of the first semester.

No advanced-standing credit will be given for work done during a four-year course of study in a high school, academy or preparatory school. No student will be permitted to take examinations for advanced standing or credit who is carrying the maximum amount of work either by extension, correspondence or residence. The maximum advanced-standing credit for work done in a junior college is sixty hours plus physical training. In no case will work done in a junior college be accredited as the work of the senior college.

All inquiries and correspondence concerning advanced standing should be adressed to J. F. Mitchell, Registrar, Pittsburg, Kan.

ORGANIZATION.

School Year. The school year is divided into two semesters of approximately eighteen weeks each, the work of the second semester being so arranged that teachers may enter in April, after completing a seven months' term, and obtain one-half semester credit. There is also a summer term of nine weeks.

ENROLLMENT.

While it is advisable for students who are entering to enroll at the begining of a semester, they may, upon sufficient reason, enroll at any time. Credit, however, is not assured to those who enroll later than one week after the opening of a semester.

AMOUNT OF WORK THE SEMESTER.

A student of college grade is expected to take not to exceed seventeen credit hours of work the week, for each semester, unless a larger assignment is granted by the accrediting committee.

THE SEMESTER HOUR.

For each semester hour of any course in the College the student is expected to devote himself for three hours, either in the classroom, laboratory, or outside preparation.

DEGREES, DIPLOMAS AND CERTIFICATES.

DEGREES.

Students who comply with the following requirements will be granted a degree of Bachelor of Science in Education, which is a life certificate to teach in any of the elementary or high schools of the state of Kansas.

1. Students must have completed 124 semester hours, 4 of which are in the Department of Physical Education.
2. At least 30 hours of the 124 must be completed in this institution.
3. Five hours of this 30 must be in the department in which he is majoring.
4. At least 8 hours of professional work must be completed in addition to those required for life diploma chosen from junior and senior subjects.
5. At least 40 hours of the 124 must be selected from the junior and senior subjects.
6. The minimum of actual resident attendance is one collegiate year.
7. No student may offer more than 20 hours in any subject in which a major is not offered.
8. No more than 8 hours of Commerce will be accepted toward this degree.
9. No more than 4 hours of the 124 will be allowed for practice courses in Physical Education.
10. Students must complete all the requirements of any of the four-year courses in which he has chosen his major.

LIFE CERTIFICATE COURSES.

Students who have attended the State Manual Training Normal School one semester, and who have met the requirements of the first two years of any of the college courses—which must include English, or Public Speaking, 4 hours; Physical Education, 2 hours; Professional, 12 hours—are entitled to a life certificate for elementary two-year and junior high schools.

KINDERGARTEN CERTIFICATE.

On completion of the kindergarten course—a course of two years, presupposing high-school graduation or its equivalent—a diploma is issued which, in accordance with a law passed by the legislature of 1907, is a certificate valid for kindergarten work in the state of Kansas.

PRIMARY CERTIFICATES.

Those persons completing the two-year primary course will be given a life certificate, also a special proficiency certificate to teach primary work. For outline of course see page 88 of this catalogue.

INTERMEDIATE GRADE TEACHERS' CERTIFICATE.

Those persons completing the two-year grade teachers' course will be given a life certificate, also a special proficiency certificate to teach in the grades. For outline of course see page 88 of this catalogue.

RURAL TEACHERS' CERTIFICATES.

Those persons completing the two-year rural teachers' course will be given a life certificate, also a special proficiency certificate to teach in the rural schools of the state. For outline of course see page 89 of this catalogue.

JUNIOR HIGH-SCHOOL TEACHERS' COURSE.

This course is planned for those desiring to teach in junior high schools, rural high schools, and the high schools of smaller towns. The present organization of these schools requires teachers well prepared to teach at least two lines of work effectively, and this course is arranged to meet those requirements. Those who meet the requirements will be given a life certificate, also a special proficiency certificate showing the lines of work in which specialization has been made. For outline of course see page 89 of this catalogue.

TERM CERTIFICATES.

THREE-YEAR STATE CERTIFICATE.

Students, who have attended the State Manual Training Normal at least one semester and completed the first year's work of any of our regular prescribed courses, having completed at least 32 semester hours credit, 6 of which are professional, are entitled to a three-year certificate.

ONE-YEAR STATE CERTIFICATE.

Students completing the Normal High School professional course are entitled to a one-year state certificate. Regular high-school graduates who have attended the State Manual Training Normal School one-half semester and completed 8 college hours of work, 4 of which are professional, are entitled to a one-year state certificate.

SPECIAL CERTIFICATES.

SPECIAL LIFE CERTIFICATES TO TEACH IN FOUR-YEAR HIGH SCHOOLS.

The Kansas legislature of 1915 provided for high-school certificates the following law:

> "Each of said institutions (Kansas State Normal School, State Manual Training Normal School, and the Fort Hays Kansas Normal School) shall have power to issue certificates to teach manual training, domestic science, agriculture, commercial subjects, drawing, music, or other occupational subjects upon the completion of such course of study as may be prescribed by the Faculty of said institutions and approved by the State Board of Administration."

In accordance with this act of the legislature, the Faculty of this institution has provided special courses for those desiring to teach music, commerce, drawing, physical education in the senior or four-year high schools. They will be issued the special life certificate upon the completion of such courses as are hereinafter outlined in this catalogue.

SPECIAL THREE-YEAR CERTIFICATES FOR FOUR-YEAR HIGH SCHOOLS.

In accordance with the above law the Faculty of this institution has provided special courses for those desiring to teach industrial arts, agriculture and home economics. A special certificate will be issued authorizing them to teach such subject or subjects upon the completion of special courses hereinafter outlined in the catalogue, each of which must embrace the following: major subjects, 24; minor subjects, 12; education, 11; physical education, 2; electives, 13.

By minor is meant credit hours in subjects from any other department in which candidate is not necessarily specializing, but which he chooses as his second preference, such arrangement being made to accommodate those who may desire or be required to teach subjects outside of their department.

The choice of this minor should be made upon the advice of the head of the department in which the major is chosen.

In cases where candidates desire to be certificated to teach a minor subject or subjects, the twelve hours designated for such subjects may be considered elective, and may be chosen from any subjects in accordance with courses catalogued.

Special certificates in industrial arts and home economics, and agriculture will be issued for a period of three years, and may be renewed for a period of three years, provided thirty additional hours of college work have been completed, of which eight hours at least must have been selected from that department in which specialization is being made, and four hours in education. The special certificate may be renewed a second time only upon the completion of thirty additional hours of college work, which must be chosen to meet the course requirements of the major, and instead of a special certificate the candidate will then have completed his full college course, and will be issued the bachelor of science degree in education, which will authorize him to teach in any of the public schools of Kansas for life.

COUNTY EXAMINATIONS.

Regularly enrolled students of the State Manual Training Normal School may, upon the payment of the usual examination fee of one dollar, present themselves for examination for county certificates, to be conducted under the supervision of the officers of the State Manual Training Normal School, at any time when such an examination is given at any point in the state. The papers in such examination will be sent to any county designated by the applicant, there to be examined by the county board of examiners, who will issue certificates to the successful applicants under the same conditions as if the examination had been conducted under their supervision.

ELECTIVES.

Choice of electives by students should be made upon the advice of the head of the department in which the student is majoring. Students will be held responsible for this requirement.

NUMBERING OF COURSES.

All courses numbered 1 to 50 are open to freshmen and sophomores. Those numbered 51 to 100 are open to juniors and seniors. Any variation from the above will be upon the recommendation of the heads of the respective departments.

In the History Department courses 62 and 65 are open to all classes.

STANDING.

The State Manual Training Normal School is a fully accredited Teachers' College, with membership in the North Central Association of Colleges and Universities. Such affiliated standing is of material advantage to students who desire to enter other colleges or universities. The life diplomas and degrees of the institution are being accepted as state certificates in practically every state in the Union, at least wherever a state will accept a degree or diploma from an institution in lieu of a state certificate.

TRANSFER OF CREDITS BETWEEN THE UNIVERSITY OF KANSAS AND THIS INSTITUTION.

Graduates in the degree courses offering at least 120 hours of college credit, except credit from the following courses, are admitted to the Graduate School of the University of Kansas as candidates for the degree of Master of Science in Education on the following conditions:

At least 40 hours of the 120 hours must be selected from senior college subjects.

A maximum of 30 hours will be accepted in Domestic Art, Domestic Science, and Industrial Arts.

A maximum of 20 hours in Public Speaking and 6 hours in Commerce will be accepted.

Credit not accepted as entrance to the Graduate School for the M. S. degree from the following courses: Bookkeeping, Business Arithmetic, Penmanship, Shorthand, Business English, Typewriting, Dictation and

Office Practice, Commercial Correspondence, Business Forms and Spelling, Domestic Art 1*a*, Domestic Science 1*a*, History courses 61 and 65; Music, except in School of Fine Arts, Piano, Voice, Glee Club and Chorus Work not accepted.

The above courses are all considered essential in the preparation of teachers for their work. They are not sufficiently advanced and of such character as to warrant their being presented as entrance credit to graduate schools.

Candidates desiring to enter the University of Kansas who have not completed the degree course of 120 hours will receive credit hour for hour for work done in all courses in this catalogue, except as above specified.

Students desiring to enter the Graduate School of the University for the Master of Arts degree will be given entrance credit in so far as the courses or degree presented show substantial equivalence to the University's requirements for similar credit.

LIBRARY.

Every student, during his first term in College, should have some instruction in the use of the library; should learn where to find the material and be able to use the index to the library—the card catalogue. He should learn how to use a book in order to find readily the information desired.

While the library serves, first, the Faculty and students, it also assists others outside its immediate vicinity. It is free to all persons for general reference, and a limited circulation is permitted. Great care has been taken by the heads of departments and the librarian to make it a reference library. Students and teachers in high schools are permitted to draw out material for debates, essays, and school entertainments, and books may be taken out for use in extension classes. Great freedom is given in the matter of taking out books and other material for study, but students are expected to comply with the regulations controlling such privileges.

The books are classified according to the Dewey decimal system. They are arranged on the shelves in numerical order, those having the same class number arranged alphabetically. The card catalogue is a dictionary catalogue. It contains an author card for every book in the library, a subject card for most of the books, and a title card when the title is a distinctive one.

RULES AND REGULATIONS.

Hours: 8 to 5, 6 to 9; Saturdays, 9 to 12, 2 to 5.

All books, except those checked out for two weeks, must be returned by 8:10 the next morning. Special permission may be given to keep a book out for a longer period, provided it will not be needed in the library. The librarian should be informed of the purpose and length of time desired, otherwise the book will be counted overdue if not returned in the morning. Books drawn out on Friday should be returned on Saturday unless permission is given to keep them until Monday morning. Books on reserve should not be taken from the library before five o'clock.

Periodicals may be drawn for home use. The current number should not be taken from the library before five o'clock and must be returned by 8:10 in the morning. Other numbers of the periodicals may be drawn out for a longer period.

All students are entitled to the full use of the library. No books or periodicals must be taken from the library until charged at the Librarian's desk. Books lost or damaged must be replaced.

LIBRARY METHODS.

This course is given one hour per week during the first four weeks of each semester and is required of all college freshmen. The purpose of this course is to teach students how to use any well-organized collection of books in a systematic and intelligent manner. Instruction in the classification and shelf arrangement of books, the use of the card catalogue, general and special reference books, and magazine indexes is given. Many students waste valuable time in a library because they do not know how to quickly find the information they seek. The application of the principles taught in this course will prevent this loss of time.

S. M. T. N. IN THE WORLD WAR.

It is difficult to know just the extent in which S. M. T. N. participated in the great World War, but so far we have data which shows that 496 former students and Faculty members of this institution were actively engaged either in the training camps or across the seas.

The sad part of it is that up to date we know that many were wounded, seven of whom were killed outright or died of wounds, and six others died of disease, and one missing. We do not know how many of our brave fellows were wounded, but we are proud of all of them. They were as true to the flag of their country as they had been to the crimson and gold, and we shall be pleased to place the laurel leaves of victory upon their brows and to stand at attention in their presence when we may have the opportunity and privilege.

In addition to this number of worthy fellow students and Faculty members, S. M. T. N. has been liberal in furnishing members of its Faculty and student body to carry on war work and to contribute of their money for war enterprises; but however much we may have done who stayed at home, we should feel that the 496 that left home and friends and school deserve our undying love and appreciation.

DAY TRADE CLASSES.

Under the provisions of the Smith-Hughes act, unit trade classes in automobile mechanics and machine shop practice are going, and other classes are being planned. In conformity with the provisions of the Federal act, the students in these classes spend three hours, or 50 per cent of the time, in the shop upon productive work, and 25 per cent of the time upon some related subject, as related science, related mathematics, and related drawing. The remainder of the time may be devoted to either vocational or nonvocational subjects.

EVENING VOCATIONAL COURSES.

Courses covering a variety of vocational work are offered in the evening classes. Our extensive and splendidly equipped shops and laboratories afford unexcelled opportunities for those who work for their living during the day. The work is directed and taught by the regularly employed faculties, assisted by the most thorough and practical men obtainable from the industries. Many men are being attracted to this work, because they find it an exceptional opportunity to add to their everyday working efficiency. At this time classes are organized in electrical work, such as electrical machinery, automobile electricity, armature winding and telegraphy; steam engineering, mining, drafting, machine-shop practice, automobile mechanics, and commerce.

VOCATIONAL TEACHER TRAINING.

The State Manual Training Normal has been designated, with the approval of the Federal Vocational Board, to maintain courses to train men to teach in the state and Federal-aided vocational schools under the Federal act known as the Smith-Hughes bill. This will afford a large number of men who are now engaged in the industries an opportunity in both day and evening classes to fit themselves for these attractive positions. For further information, see section VI, page 113.

THE COÖPERATIVE BUREAU OF EDUCATIONAL RESEARCH.

In order to help further the movement of scientific education and render assistance to progressive schoolmen in determining the relative rating of their schools, this Bureau under a director has been established.

A stock of the standard scales and tests will be carried and will be distributed to schools at a minimum cost. The following scales may now be had—Courtis Arithmetic, Reading, Writing, Geography, Supervisory, English and Composition; Ayers' Writing and Spelling Scales; Gray's Silent and Oral Reading Tests; Thorndike's Writing Scale and Visual Vocabulary Tests; Rugg and Clark's Algebra Tests; Monroe's Silent Reading Tests, Dictation Spelling Test, Diagnostic Tests in Arithmetic; Cleveland Arithmetic Tests; Willing Scale for Measuring Composition; Nassau County Supplement to Hillegas Scale; Freeman Chart for Diagnosing Handwriting; Rugg's Rating Scale for Judging Teachers in Service and Rating Scale for Judging High School and College Students; The Freeman-Rugg Group Intelligence Test; Hotz First Year Algebra Scale; Van Wagenen American History Scales; Murdock Sewing Scale; Starch's English Grammar Tests, Punctuation Scale, Spelling Test, Geography Test, Geometry Test, Latin Test, Physics Test, Reading Test; Home Economics Grading Cards—Iowa State College; Woody-McCall's Mixed Fundamentals: Hahn-Lackey Geography Scale. Other Tests will be added as they appear. Correspondence is invited.

The Bureau has been making surveys of local schools and plans to coöperate with other schools desiring to survey their school conditions. Inquiry may be made to this bureau as to methods and plans of coöperation in making a school survey.

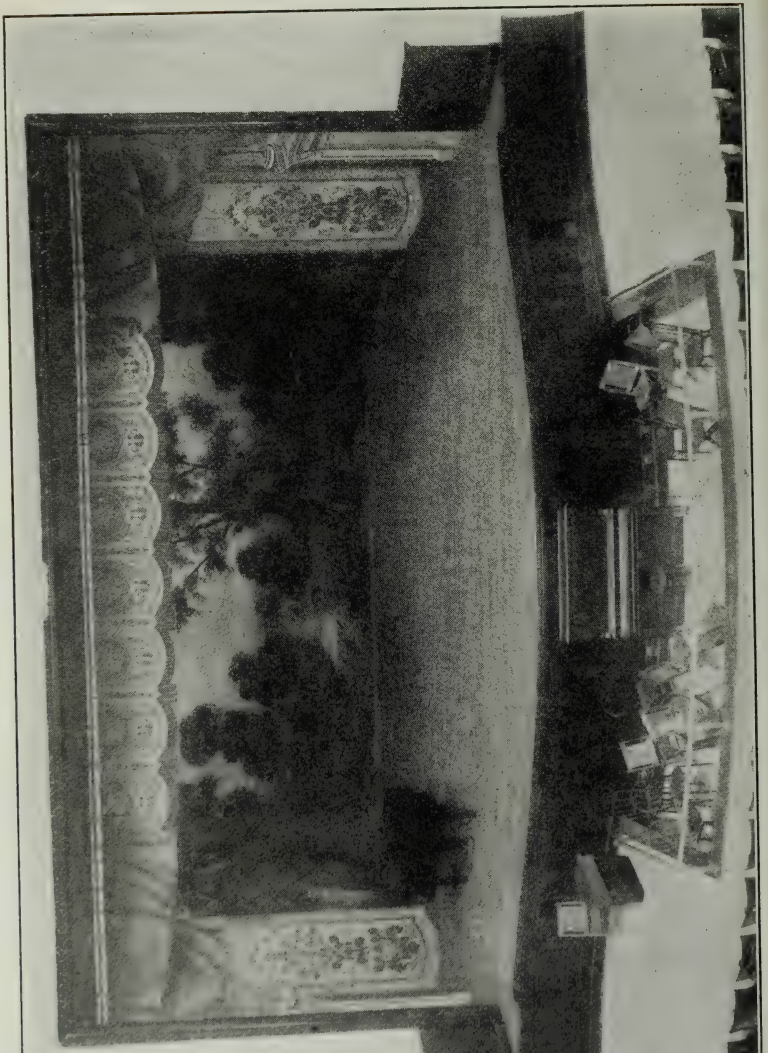
THE ENGINEERING SOCIETY.

The Engineering Society is composed of those students who are taking technical work in this institution with a purpose of becoming practical engineers, and those instructors who are engaged in teaching this type of work. Monthly meetings are held, and the programs include reports on current engineering topics by instructors and students, reports of scientific meetings and associations, lectures by prominent engineers and business men connected with industrial organizations. The membership also comprises many students who are specializing in mathematics and physical science for the purpose of becoming teachers and who wish to get into close contact with the practical applications of their special subjects. This organization is serving a valuable purpose in linking closely together the practical engineers with those teachers who are teaching work directly related to practical vocations.

VOCATIONAL EDUCATION FOR DISABLED SOLDIERS.

The Federal Board for Vocational Education for rehabilitation of disabled soldiers, in selecting institutions equipped for the kind of work which they desired these men to have, designated this institution for that purpose. We are justly proud of this honor, and especially when the inspecting officer reported to this board that our shops for equipment, light and sanitation were among the very best that he had found anywhere, and in many respects far superior to the average institutions doing similar work. The board, by reason of this fact, has sent to this institution a large number of men to be trained in Electrical and Mining Engineering, Steam and Mechanical Engineering and in various mechanical trades. The many technical courses offered by this institution afford an excellent opportunity for men who desire to prepare themselves for a better job. This should help any young man, wishing to go to school to prepare himself in practically vocational subjects, to decide the question. We have just been recently informed that a very much larger number of men are to be sent to us by the Federal Board for Vocational Education. We accept this charge with pleasure and full confidence that our equipment and instructors will do for these men what the government of the United States desires to have done.

For further information write W. A. Brandenburg, *President.*



THE STAGE, CARNEY HALL.

SECTION II.

College of Liberal Arts and Sciences.

THE FACULTY.

WILLIAM A. BRANDENBURG, Ph. B., President.

G. W. TROUT, A. M., Dean of College and Professor of History and Social Science.

EULALIA E. ROSEBERRY, B. S., Professor of Geography.

JAMES ANDERSON YATES, B. S., M. S., Professor of Chemical and Physical Sciences.

ERMINE OWEN, M. A., Professor of English.

D. M. BOWEN, B. A., Professor of Education and Principal of Training School.

ORIS P. DELLINGER, A. B., Ph. B., Professor of Biology.

J. A. G. SHIRK, M. S., Professor of Mathematics and Applied Mechanics.

MARGARET COVENTRY, A. B., Assistant Professor in Physical Sciences.

WILLIAM EDGAR RINGLE, A. B., Associate Professor of Biology.

HATTIE MOORE-MITCHELL, A. M., Professor of Methodology and Dean for Women.

O. F. GRUBBS, A. B., B. S., Associate Professor of History.

SAMUEL J. PEASE, M. A., Professor of Language.

ERNEST BENNETT, B. S., Assistant Professor of French and Latin.

EDGAR NELSON MENDENHALL, Ph. B., Professor of Rural Education.

RICHARD ROBERT SIGLER, A. M., Associate Professor of Biology.

C. O. VAN DYKE, M. A., Associate Professor of Mathematics.

GEORGE V. EMERY, A. B., Associate Professor of Physical Sciences.

CLINTON W. WRIGHT, A. B., Assistant Professor of Mathematics.

ANNE CASELEY, A. B., Assistant Professor of History.

ETHEL MAE HILL, B. S., Assistant Director of Physical Education for Women.

JOHN W. BOWERS, Ph. D., LL. D., Associate Professor in History.

FRANK DEERWESTER, A. B., Pd. M., Pd. D., Associate Professor of Psychology.

G. W. WEEDE, B. S., D. D. S., Director of Physical Education for Men.

WILLIAM H. MATTHEWS, Instructor in Physical Science.

A. T. DUNHAM, B. S., B. Met., Associate Professor Chemical and Physical Science.

ELIZABETH P. MOULTON, Assistant Professor of Biology.

H. H. HALL, A. B., Assistant Professor of Biology.

ELIZABETH HELEN FLEESON, M. A., Assistant Professor of Biology.

ELIZABETH A. LATHROP, A. B., Assistant Professor of English.

LAWRENCE EVERETT CURFMAN, B. S., Assistant Professor of Mathematics and Applied Mathematics.

MAY G. LONG, Director Physical Education for Women.

REGINA FRANK, Assistant Director of Physical Education for Women.

BESSIE L. ASHTON, B. S., M. S., Assistant Professor of Geography.

JOHN R. PELSMA, B. S., A. B., Ph. M., M. D., Professor of Public Speaking.

MARY E. ANDREWS, A. B., Assistant Professor of English.

FRANK J. DOBROVOLNY, A. B., Assistant Professor in Physical Sciences.

COLLEGE OF LIBERAL ARTS AND SCIENCES.

DEGREES.

Students who comply with the following requirements will be granted a degree of Bachelor of Science in Education, which is a life certificate to teach in any of the elementary or high schools of the state of Kansas.

1. Students must have completed 124 semester hours, 4 of which are in the Department of Physical Education.
2. At least 30 hours of the 124 must be completed in this institution.
3. Five hours of this 30 must be in the department in which he is majoring.
4. At least 8 hours of professional work must be completed in addition to those required for life diploma chosen from junior and senior subjects.
5. At least 40 hours of the 124 must be selected from the junior and senior subjects.
6. The minimum of actual resident attendance is one collegiate year.
7. No student may offer more than 20 hours in any subject in which a major is not offered.
8. No more than 8 hours of Commerce will be accepted toward this degree.
9. No more than 4 hours of the 124 will be allowed for practice courses in Physical Education.
10. Students must complete all the requirements of any of the four-year courses in which he has chosen his major.

ADMISSION.

1. High-school graduates presenting fifteen or more approved units or credits will be admitted, without examination, to the first year of the Normal College course. (A unit is one year's high-school work, five periods per week, two periods of laboratory or shop work counting as one.)

2. Students of maturity having at least thirteen (13) units of high-school work may be admitted conditionally to certain prescribed courses.

All students should present transcript of all grades made prior to their entrance here. This includes high-school work, work done in other institutions, and teacher's certificates.

EXAMINATIONS FOR ADVANCED STANDING.

Student may, upon good and justifiable grounds, be permitted to take examinations for advanced standing by the permission of the Accrediting Committee and the head of the department in which the examination is to be taken, in such subjects as may be agreed upon, it being understood that no student will be permitted to take such examination as would in any way jeopardize the standing of the institution in its affiliated relations.

Application for advanced standing should be made at the first entrance of the student to the institution. Students who expect to take examinations for advanced standing or submit credits or credentials from other institutions for advanced standing should, if possible, send these credentials and evidences of work completed in other institutions to the registrar of this institution before the time of enrollment, and thus save themselves a lot of worry and waiting at the beginning of the semester, when they should be classified and enrolled in their class work. These credentials should be sent two or three weeks before the opening of the semester, that the Accrediting Committee may have opportunity to evaluate them and fix the standing of the student. The Accrediting Committee can give no estimate of the advanced standing of prospective students unless these conditions are complied with.

The committee cannot consider applications for examination for advanced standing which are made later than ten days after matriculation, and if the applicant is permitted to take such examinations these examinations must be taken not later than the middle of the first semester. No advanced standing credit will be given for work done during a four-year course of study in a high school, academy or preparatory school. No student will be permitted to take examinations for advanced standing or credit who is carrying the maximum amount of work either by extension, correspondence or residence. The maximum advanced-standing credit for work done a junior college is sixty hours plus physical training. In no case will work done in a junior college be accredited as the work of the senior college.

All inquiries and correspondence concerning advanced standing should be addressed to J. F. Mitchell, Registrar, Pittsburg, Kan.

All advanced standing credits conditional and may be withdrawn if the subsequent record of the student should warrant it.

No advanced standing credit for collegiate or professional standing will be granted without the recommendation of the Accrediting Committee.

ENROLLMENT.

While it is advisable for students who are entering to enroll at the beginning of a semester, they may, upon sufficient reason, enroll at any time. Credit, however, is not assured to those who enroll later than one week after the opening of a semester.

FEES.

Full information regarding fees and expenses is made on page 31, section I, General Information.

AMOUNT OF WORK THE SEMESTER.

A student of college grade is expected to take not to exceed seventeen credit hours of work the week, for each semester, unless a larger assignment is granted by the Accrediting Committee.

THE CREDIT HOUR.

For each credit hour of any course in the College the student is expected to devote himself for three hours, either in the classroom, laboratory, or outside preparation for one semester of 18 weeks.

GENERAL COURSE.

For the preparation of high-school teachers majoring in Biology, English, Foreign Languages, History, Mathematics, or Physical Sciences.

Students expecting to receive a Life Certificate at the end of the second year of this course must offer at least 16 hours and not more than 20 hours in his major, 12 hours in a minor, 12 hours Education, 4 hours English, 2 hours Physical Education, and not more than 8 hours in any other department.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Biology	3 or 5	Psychology (2)	3
Chemistry	2 or 5	Major	2, 3, or 5
English	4	Physical Education (2)	1
Foreign Language	3 or 5	Electives	7, 9, or 10
History	2, 3, or 5		16
Mathematics	2, 3, or 5		
Physiography	3 or 5		
Physical Education	1		
	16		

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Elementary Education	3	Modern Education	3
General Methods (4)	2	Major	2, 3, or 5
Major	2, 3, or 5	Electives	7, 9, or 10
Electives	5, 7, or 8		15
	15		

JUNIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Education	5	Major	2, 3, or 5
Major	2, 3, or 5	Electives	10, 12, or 13
Physical Education (6*a*)	1	Physical Education (6*b*)	1
Electives	5, 7, or 8		16
	16		

SENIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Teaching	3	Major	2, 3, or 5
Major	2, 3, or 5	Electives	10, 12, or 13
Electives	7, 9, or 10		15
	15		

REQUIREMENTS FOR DEGREE OF BACHELOR OF SCIENCE EDUCATION MAJORING IN PROFESSIONAL GROUP.

I. General Requirements:	*hrs.*	II. Professional, 30 to 40 hours:	*hrs.*
English	6	Psychology	6
Public Speaking	3	Elementary Education	3
Sociology	3	Secondary Education	3
Five (5) hours each in History, Mathematics, Biology and Physical Science	20	Modern Education	3
Physical Education	4	Administration	3
		Teaching	3
		Elections in Ed. to make 30 to 40 hours.	

III. Minor selected from any degree group... 20 hours.
IV. Electives to meet degree requirements of... 124 hours.

Students not offering at least three units of foreign languages from secondary school are urged to offer at least ten hours in some language other than English.

One of the Biological Laboratories in Carney Hall.

COURSE GROUPS.

Courses of instruction are organized into ten groups, with special emphasis on a different subject called the major subject in each group. A course comprising two years' work is provided for those preparing for grade positions. Thirty semester hours of work in a subject constitute a major in that subject. Students wishing to graduate from the degree course must elect one of the groups not later than the Junior year.

1. INDUSTRIAL ARTS:	*hrs.*
Industrial	32
Professional	20
English	8
History	9
Mathematics	7
Physical Sciences	6
Physical Education	4
Drawing	16
Elective	22

2. HOME ECONOMICS:	
Home Economics	40
Professional	20
Biology	10
Physical Sciences	12
English	7
History	8
Physical Education	4
Drawing	6
Elective	17

3. BIOLOGY:	
Biology	30
Professional	20
English	8
History	8
Mathematics	5
Physical Sciences	10
Physical Education	4
Elective	39

4. HISTORY:	
History	30
Professional	20
Biology	8
English	12
Mathematics	4
Physical Sciences	8
Physical Education	4
Elective	38

5. ENGLISH:	
English	30
Professional	20
Biology	5
History (5) (6) (58)	12
Language	12
Mathematics	3 or 4
Physical Sciences	5
Physical Education	4
Elective	33 or 34

6. MATHEMATICS:	*hrs.*
Mathematics	30
Professional	20
Biology	5
English	4
History	8
Physical Sciences	8
Physical Education	4
Elective	45

7. PHYSICAL SCIENCES:	
Physical Sciences	30
Professional	20
Biology	10
English	4
History	8
Mathematics	8
Physical Education	4
Elective	40

8. FOREIGN LANGUAGE:	
*Language	30 or 35
Education	20
English	12
History	8
Physical Education	4
Two of the following:	
Mathematics	5
Physical Sciences	5
Biology	5
Elective	40 or 45

9. PROFESSIONAL TRAINING:	
Professional Training	30 or 40
†Minor	20
History	5
Physical Sciences	5
Biology	5
English	6
Public Speaking	3
Mathematics	5
Teaching	3
Physical Education	4
†Elective	48 or 58

Students not offering at least three units of foreign languages from secondary school are urged to offer at least ten hours in some language other than English.

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* See note under title Foreign Language major, section 2, page 74.

† A minor of 20 hours chosen from electives selected from any degree group.

BIOLOGICAL SCIENCES.

O. P. Dellinger, Professor.
W. E. Ringle, Associate Professor.
Harry Hall, Associate Professor.
*J. W. Wells, Assistant Professor.
Elizabeth Fleeson, Assistant Professor.
Elizabeth Moulton, Assistant Professor.
Fines Green, Student Assistant.
Robley Mathews, Student Assistant.
John Weidenmann, Student Assistant.

There has developed within recent years a demand for better and more universal biological instruction. With the introduction of agriculture and domestic science into our schools, a knowledge of biology is demanded of a much larger number of individuals. For a long time biology was taught for its general cultural value or in its application to medicine; and to-day most of the courses in colleges and universities, and in some normal schools, are organized to meet the needs of the general student or the student of medicine. Teachers of biology have failed to realize that the mass of biological instruction from now on must be largely designed for students in agriculture, domestic science, education, and medicine, and the courses must be constructed as to meet the special needs of these students.

It is the plan and purpose of the Department of Biology to offer instruction in biology as it applies to these fields; and many of the courses organized are especially for the student of domestic science, agriculture, or education. There are, however, a few courses of a general nature, but they are fundamental to any education.

The department has moved into new quarters, consisting of eleven rooms given over to laboratories, lecture rooms and offices. The laboratories are newly equipped with the most modern of apparatus and appointments. The department has forty new compound microscopes, with fifteen oil immersions, dissecting miscroscopes, prepared microscopic slides for histology, embryology and bacteriology, also several hundred lantern slides. The incubators, sterilizers and glassware for cultural work in bacteriology are most complete. For the nature-study work we have acquaria and vivaria for living specimens, also a very complete collection of material, made by extension students and donated to the department, illustrating nature-study work in the grades.

The new laboratories have desks equipped with water, gas, electricity and a complete refrigerating outfit. We are equipped to do in a very effective way the laboratory work of public health bacteriology, physiology, histology, nature study, botany and zoölogy. The School has thirty-five acres on which are large ponds, garden plots, agricultural plots and demonstration areas for the use of students, where they become acquainted with a great many of the native plants and animals and natural habitat.

BIOLOGY.

Course 1. General Biology. This course is an introduction to the other biological sciences, and aims to acquaint the student with the elementary forms and forces of living nature. Here the student gets his first glimpses of the laws of evolution and heredity as they apply to human progress. Much attention is paid to the evolution of conduct of life. Types for study are selected as far as possible from the common animals. Three hours credit. Laboratory fee for material used.

Course 2. General Biology (continued). In this course the student studies the laws of growth and reproduction of living organisms as they are illustrated in plants. Here emphasis is given to the economic phases of botony. Plants are studied in their relation to medicine, textiles, lumber, ornamentation and food production. Attention is given to propagation and distribution. Three hours credit. Laboratory fee for material used.

Course 3. INVERTEBRATE ZOÖLOGY. In this course a series of forms representative of all the phyla of the invertebrate are studied. The emphasis is placed on morphology, life history and behavior. Prerequisite, course 1 or its equivalent. Five hours credit. Laboratory fee for material used.

Course 4. VERTEBRATE ANATOMY. A study of the comparative anatomy of a few representatives of the vertebrate. Dissection of one or two types from each group constitutes the laboratory work. Prerequisite, course 1. Five hours credit. Laboratory fee for material used.

Course 5. MORPHOLOGY OF THALLOPHYTES AND BRYOPHYTES. A course in which the morphology, classification and genetic relationships of groups of plants representative of the algæ, fungus, moss and liverworts are studied. Some attention is given to collection and preserving of the representatives of these groups in the country about the Normal. Prerequisite, course 2 or its equivalent. Five hours credit. Laboratory fee for material used.

Course 6. MORPHOLOGY OF PTERIDOPHYTES AND SPERMATOPHYTES. A continuation of course 5, into the higher groups of plants. Special attention will be given to life histories and classifications. Prerequisite, course 2 or its equivalent. Five hours credit. Laboratory fee for material used.

Course 14. APPLIED BIOLOGY I—NATURE STUDY. This course is designed especially for primary and grade teachers. It attempts to answer the question, What knowledge of living forms is adapted to children between the ages of six and fifteen? A review of the literature in this field is also given. Four hours credit.

Course 15. APPLIED BIOLOGY II—ELEMENTARY AGRICULTURE. The principles of vegetable gardening, fruit growing, landscape gardening, forestry, and the elements of animal husbandry form the basis of this course. Two hours credit.

Course 19. ENTOMOLOGY. A course in the classification and collection of life histories of the common insects, also a study in the methods of control of the common injurious insects in the orchard, garden and field crops. Two hours credit. Summer terms.

Course 53. GENETICS. The course is especially designed for domestic science students, but is open to all students of college grade. A careful review of the literature on heredity and eugenics is given, together with a study of the law of reproduction. Two hours or four hours credit.

Course 54. HISTOLOGY. This is a laboratory course in which the student is given an opportunity to make preparations of the animal tissues and to study their microscopical structure. Four weeks is devoted to the chick embryo. Two or four hours credit. Laboratory fee for material used.

Course 55. EMBRYOLOGY. The development of the germ cells fertilization, the differentiation of the germ layers, and the growth and development of the systems and organs are studied in this course. The laboratory work consists of mounting and studying a series of sections of chick, pig and turtle embryo. Three hours credit. Fall and summer terms. Laboratory fee for material used.

Course 61. Plant Physiology and Pathology. This is the study of the principal life functions of plants, such as photosynthesis, respiration, transpiration, growth and reproduction. The diseases of the orchard, farm and garden plants are studied in this course. Students become acquainted with these diseases and the best methods of prevention. Lectures and laboratory work. Three hours credit. Fall term.

Course 62. Systematic Zoölogy. A classification of the different groups of animals of the state. By appointment only. Three hours credit. Prerequisite, course 1 or 2, or equivalent.

Course 64. History of Biology. A study of the history of biology from the times of the Greeks to the present. The part different people and individuals have played in developing the science is noted. Required of all students majoring in biology, but open to any college student who has twelve or more hours in biology. Four hours credit.

Course 65. Social Biology. In this course the part biology has played in the development of the race is studied, especially the relation of biology to medicine, agriculture and education is emphasized. There are five books to be read and reviewed. Four hours credit.

Course 66. Biology and Secondary Education. With the introduction of courses in agriculture, domestic science and education into the high school, biology takes a new place in this field of education. This course discusses the nature and scope of the work in biology in the high school, and relates it to these allied subjects. Two or four hours credit.

Course 69. Economic Entomology. A course similar to course 19, but presupposing a knowledge of the morphology of insects. Students will be required to make collections of the common economic insects together with their life histories. Also, an experimental study of the effectiveness of various agencies of control will be made. This course is largely a laboratory and field course. Two hours credit.

PHYSIOLOGY, HYGIENE, AND PUBLIC HEALTH.

Course 11. Human Physiology. The purpose of this course is to teach those things that will enable the student to make of his or her body, and also the bodies of those they minister to, the most efficient mechanism possible. The requirements of the body as to food, exercise, sleep, fresh air, bathing, etc. The physiological requirements of children, where they differ from the adult, will be emphasized. The physiology of reproduction will receive the attention it deserves. Daily for twenty weeks. Four hours credit. Laboratory fee for material used.

Course 12. Physiology and Hygiene. This is a course designed especially for grade and rural-school teachers, covering the principles of physiology and hygiene. Special emphasis is laid on ventilation, foods, play, eye and ear hygiene, and those phases of the subject which are of interest to every grade-school teacher. Three hours credit. Fall and summer terms.

Course 16. General Bacteriology. This course is required of all students who major in domestic science or agriculture, and is open to any student in the college course. It is a general introductory course consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit. Fall, spring and summer terms. Laboratory fee for material used.

Course 17. Hygiene and Public Health. A course in elementary bacteriology designed especially for grade and rural teachers. The course is a general survey of the field of bacteriology as it relates to civic and school sanitation, agriculture and the preservation of foods.

The student becomes familiar with immunology and the physiological factors involved in the natural resistance to disease. Three hours credit. Fall and summer terms.

Course 18. VOCATIONAL HYGIENE AND SANITATION. A course designed especially for the students in industrial arts. The principles of hygiene and sanitation as related to the industries and the men in industrial work form the basis of this course. One hour credit. Spring and summer terms.

Course 51. SANITATION AND WATER SUPPLIES. A course covering all the problems of sanitation of the home, sewage disposal, ventilation, and water supplies. Two hours credit.

Course 56. HYGIENE AND PUBLIC HEALTH. A course designed especially for those interested in the general problems of public health. The course is a general survey of all those factors which incapacitate man for social service. Bacteria, food, water, ventilation and air, mental hygiene, vocational hygiene, and school hygiene are some of the topics discussed. The reading consists of references from a number of books in this field. Four hours credit.

Course 57. ADVANCED BACTERIOLOGY. This is a course covering the elementary principles of immunology and serology. A student becomes familiar with laboratory procedure and cultural methods of Public Health work. Sufficient number of animals are used to familiarize the student with the processes of building up immune bodies. Three hours credit.

Course 58. SPECIAL METHODS. This is a course devised to meet the needs of those students who wish to make themselves more familiar with the practical work of the laboratory end of the Public Health Service. It is intended primarily for the student who has finished the courses in Histology, Physiology, and Bacteriology. Stress will be put upon the routine work of such a laboratory, and sufficient repetition will be demanded in order to make the student have confidence in his findings. Gastric contents, pathological urines, spinal fluids, throat cultures, etc., and direct bacterial examination, as well as special methods in milk and water, will constitute the subject matter of the course. Two hours credit.

Course 67. NEUROLOGY. A study of the gross anatomy, physiology and microscopic structure of the nervous system of the vertebræ. Two hours credit.

Course 68. NUTRITIONAL PHYSIOLOGY. As the name implies, the course gives special attention to the physiology of nutrition. It covers about the same field as the first half of course 11, but goes much more into detail, and has more extended laboratory work. Three hours credit. Laboratory fee for material used.

AGRICULTURE.

The work of this subject is conducted by means of textbook study, reference work, lectures, demonstrations, observation of field work, laboratory experiments, practical work in the school gardens and at the experiment stations. The experiment stations consist of about thirty-five acres devoted to various experiments and tests that have special value to the teachers and farmers in this section of the country. Through the affiliation of other departments, practical courses in farm blacksmithing, farm carpentry, gas engines and farm mechanics have been worked out to meet the needs of those specializing in agriculture. The following courses are offered:

Course 1. RURAL-SCHOOL AGRICULTURE. This course is designed to meet the needs of those who are preparing to teach in the grades and rural schools. Practical experiments and demonstrations will be outlined for each grade. First semester; one hour lecture, four hours laboratory and field. Two hours credit.

Course 2. GENERAL AGRICULTURE. A course in which a general survey of the whole field of agriculture is taken. This course is planned especially for the students who wish a general introduction to this great industry. While Biology 1, 2 or 12 is desirable as a prerequisite, it is not necessary. Three hours credit.

Course 3. VEGETABLE GARDENING. Principles and practices used in growing vegetables. Special attention is given to the home garden. The scoring, marketing, and canning of vegetables is given special emphasis. The work has been arranged to meet the needs of those specializing in Domestic Science and Agriculture. Second semester; two hours lecture, two hours laboratory and field. Two hours credit.

Course 4. AGRONOMY. Lectures and recitations on the history, production, cultivation, harvesting and marketing of farm crops. The laboratory and field work will consist of a study of all crops adapted to this region and judging of different cereals. First semester; two hours lecture, four hours laboratory. Five hours credit.

Course 5. SOILS AND FERTILIZERS. Soils are studied as to origin, kind and fertility. Much attention is given to the question of how to keep soils productive and how to keep soils to a high state of production. Twenty weeks. Five hours credit. Laboratory fee for material used.

Course 6. ANIMAL HUSBANDRY. This course includes what is usually given in more extensive courses, much attention being given to subjects of breeds and types of farm animals, stock judging, feeds and feeding, and care and diseases of animals. In it the student becomes acquainted with the things necessary to intelligent management of stock on the farm. Two hours lecture, four hours laboratory. Three hours credit.

Course 7. FARM MANAGEMENT. Selection of farms; various systems of farming; investment of capital; scoring of farms in the community; farm layout; labor; details, marketing, farm accounting. Five hours credit.

Course 9. AGRICULTURE CLUB. The Agriculture Club meets regularly on Wednesday, at the noon hour. Here the best articles from the leading agriculture magazines and periodicals are reviewed and discussed. A light luncheon is served, and this work is of special value to those preparing to teach agriculture. Open to all agriculture students.

Course 51. HORTICULTURE AND FARM FORESTRY. This course gives the student a general survey of the field of fruit and truck growing, gardening and forestry. Much of the work will be done in the field. Spring and summer terms. Three hours credit.

Course 52. POULTRY CULTURE. A general course dealing with poultry houses, yards, etc., fattening and marketing, description of breeds and varieties of poultry. Two hours lecture, four hours laboratory. Three hours credit.

Course 53. FARM DAIRYING AND BUTTER MAKING. A brief course in the composition of milk and milk products, the use and care of cream separator, the handling of cream, and the manufacture of butter on the farm. Instruction will also be given in the care and feeding of dairy cows and raising dairy calves. Spring and summer terms. Two hours credit. Laboratory fee for material used.

Course 54. AGRICULTURAL BACTERIOLOGY. Bacteriology as applied to the activities of the farm. Special attention will be given to soil and dairy bacteriology. Required of all agriculture students. Two hours credit. Spring and summer terms.

Course 55. METHODS IN AGRICULTURAL EDUCATION. The origin and development of agricultural education, especially for teachers preparing to teach in rural and secondary schools. In this course the best methods and materials for the teaching of agriculture will receive careful attention. Practice will be given in outlining agricultural courses. Required of all students preparing to teach agriculture. Prerequisite, ten hours in Agriculture. Two hours credit.

Course 11. BOYS AND GIRLS CLUB WORK. The origin and development of club work. Especially for teachers preparing to teach in rural and city schools, principals, superintendents and teachers of agriculture. In this course the best methods, plans and outlines for the interesting of boys and girls in some phase of club work, will receive careful attention. One thousand boys and girls of the Pittsburg City Schools are enrolled in poultry, sewing, baking and garden clubs. Work with these clubs forms part of this course. Two hours credit.

CHEMICAL AND PHYSICAL SCIENCES.

JAMES A. YATES, Professor.
GEORGE V. EMERY, Associate Professor.
A. T. DUNHAM, Associate Professor.
MARGARET COVENTRY, Assistant Professor.
WILLIAM H. MATTHEWS, Assistant Professor.
F. J. DOBROVOLNY, Assistant Professor.
JOSEPH BRADLEY QUIG, Assistant Professor.
ELMER W. JONES, Assistant Professor.
LEO HUDIBERG, Student Assistant.
ROBERT M. MENDENHALL, Student Assistant.
LYSLE MCKINLEY, Student Assistant.

The department stresses the work for the preparation of teachers and in addition gives courses which prepare its graduates for different vocational lines of work. See Industrial Engineering Division of this catalogue, page 147.

No lesson taught educators by the recent war is more apparent than that of the necessity of stressing the importance of science teaching in our schools, and also the great need of chemists and physicists in our manufacturing industries and commercial operations. Probably the most striking lesson of the war, not only to ourselves, but to our allies, was the absolute necessity for work of men trained in the chemical and physical sciences. Our growing commercial and industrial activities are creating a demand as never before for the services of men and women thoroughly trained in the theoretical as well as the practical courses of physics and chemistry, not only for teachers, but for those who desire to go into the various scientific industries of our country.

The increasing demand for teachers trained in the physical sciences, and especially those who are schooled in their application, is shown by the introduction of general science, domestic science and agriculture into the curricula of our grade and secondary schools, as well as chemistry and physics in our high schools. The department has arranged its courses so as to correlate with and furnish the scientific background for the student in home economics or industrial arts, together with academic and other scientific subjects. The department has provided courses for those who expect to teach in the grades as well as for those

One of the Chemical Laboratories in Carney Hall.

who expect to do departmental work in the grade schools and high schools of our state. In the description of the courses, which follow, their relation is readily seen; and further, that emphasis is placed upon the application of the principles studied in the different courses.

EQUIPMENT.

The chemical rooms and laboratories occupy the north half of the third floor of Carney Hall. These rooms and laboratories are equipped with apparatus and supplies for the completion of a full college course in different lines of chemical work. There are four laboratories and one lecture room, in addition to a balance room, storeroom and office. The rooms for household physics, general science and geology are located on the east side of the north half of the middle floor of Carney Hall, and include a lecture room, laboratory, geology museum, and office. These rooms are equipped with apparatus and supplies for the proper presentation of these important subjects. The rooms for industrial physics are located in the Industrial Arts building, and are well equipped for industrial and engineering physics, with an additional laboratory 40x90 feet for industrial electrical subjects on the second floor of the S. A. T. C. barracks.

ADVICE TO STUDENTS AS TO CHOICE OF COURSES.

Those who wish to do the larger part of their work in Chemistry should take courses 1 or 2, 3, 51, 52, 53, and 54. Any additional chemistry courses chosen should be so selected as to fit the student for his future work. A student wishing to do the larger part of his work in Physics should choose courses 31, 32, and 33, with such additional courses as will best fit him for his future work. Students who expect to major in physical science with a view to doing graduate work in either physics or chemistry in the University are strongly advised to elect at least ten hours each of French and German and mathematics through the calculus. If the greater part of the student's major is chemistry, at least ten hours of physics from courses 31, 32, and 33, should be chosen; if the greater part of the student's major is physics, at least ten hours of chemistry should be chosen from courses 1 or 2, and 3. Those students who major in this department and who look forward to school supervision work, are advised to take courses 1 or 2, and 3 in chemistry; courses 23, 25, 26, 27, and 33 in physics; and courses 81 and 82 in geology. The remainder of the major may be elected from any of the three lines of work above. For the general electives in the course, the student is strongly advised to choose the courses in such a way that either in his high-school or college course he will have made an acquaintance with the different lines of work he will be called upon to supervise.

CHEMISTRY.

Course 1. General Chemistry. This course consists of lectures, recitations and laboratory work upon the fundamental principles of this science, together with the application of chemistry to the various arts and industries. Among the practical subjects considered are chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils and varnishes, water, air, fuel, and the elementary principles of chemistry in food preparation and other operations of the home. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. This course is not open to students offering elementary chemistry for admission. Laboratory fee for material used. Five hours credit.

Course 2. Inorganic Chemistry. This course is built upon a course in elementary chemistry, and consists of lectures and recitations upon the more difficult principles involved in general chemistry, including such subjects as gas laws, the solution of chemical examples, nomenclature, principles of solution, etc. The application of chemistry to the varied needs of man is emphasized. Laboratory fee for material used. Prerequisite, a unit of high-school chemistry or Chemistry 1. Three days lecture and recitation with two hours laboratory work leads to four hours credit; three days lecture and recitation with four hours laboratory work leads to five hours credit.

Course 3. QUALITATIVE ANALYSIS. This course consists largely of laboratory work. Emphasis is placed upon the identification and separation of the metallic and non-metallic ions. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

Course 10. FOOD CHEMISTRY. A special course for domestic science students. This course consists in the identification of food adulterants and preservatives, the effect of these upon the body, the analysis and relation of the different classes of foods, and includes a study of organic chemistry related to food. Prerequisite, Chemistry 1. Three hours credit.

Course 15. GENERAL SCIENCE. This course is planned for grade and junior high-school teachers, and consists of easy demonstrations, which may be performed by the teacher to illustrate some of the scientific principles involved in the study of such subjects as air, water, fire, food, clothing, etc., thereby giving the teacher preparation which will enable her to acquaint the child with its physical environment. Two or four hours credit.

Course 16. ELEMENTS OF MINING. This is a general course involving the principles which are employed in prospecting, location and sinking a shaft, cribbing, timbering, lighting, shot firing, underground methods of working both metal and coal mines. Three hours credit.

Course 17. COAL MINING. This course includes a careful study of ventilation, haulage, and machinery used in coal mining. Three hours credit.

Course 18. MINE GASES AND VENTILATION. A beginning course in the study of gases found in mines. The properties and tests for these gases will be thoroughly studied. These gases will be prepared in the classroom and various tests for them made. The safety lamp and its use in testing for gases found in the mine will be thoroughly studied. The origin and removal of the gases will receive attention. No effort will be spared in teaching the students in this course the practical side of this work. In ventilation the student will be taught how to get the necessary data and how to find the quality of air in a mine, how to keep the quality of the air supply in the mine in proper healthful condition, also how to make the necessary measurements and calculations for the proper ventilation of mines. Two hours credit.

Course 19. EXPLOSIVES. This course deals with the explosives used in mining, their proper care and attention. The chemistry of explosives is studied in a practical way; also the causes that lead to explosions and how these accidents may be avoided is carefully considered. In all these courses opportunity will be given for questions and discussions in order to find the best way to do the work in hand, and also to avoid accidents. The different methods of mining will receive their share of attention. Two hours credit.

Course 20. MINING ENGINEERING. This course includes a study of the geological conditions affecting mine operations, making and reading mine maps, a study of the problems that arise in selecting the power to be used in mining, and also the problems involved in transportation and operation of the mine. Two hours credit.

Course 51. QUANTITATIVE ANALYSIS. This is principally a laboratory course, including both gravimetric and volumetric analysis, supplemented by lectures and recitations. The calibration of glassware and the study of the relation of chemistry to other sciences, along with the various vocations of life, are included in this course. Prerequisite, Chemistry 3. Laboratory fee for material used. Two or three or five hours credit, depending on the amount of work done.

Course 52. ORGANIC CHEMISTRY. A general course in organic chemistry, including lectures, recitations and laboratory work. This course emphasizes the properties and uses of the organic compounds found in our industrial activities, together with the underlying chemical principles involved. Prerequisite, Chemistry I. Laboratory fee for material used. Five hours credit.

Course 53. PHYSICAL CHEMISTRY. This course consists of lectures, recitations, readings and laboratory work. The elementary principles of physical chemistry are studied in this course. Emphasis is placed upon a thorough understanding of the laws involved in general chemistry. The basic nature of these principles to the historical development of chemistry is considered. The aim is to lay a solid foundation for future work in the subject. Prerequisite, Chemistry 1, 3 and 51. Five hours credit.

Course 54. INDUSTRIAL CHEMISTRY. As the name implies, this course consists of a study of various chemical industries and the part the chemist plays in the different lines of manufacture. Both organic and inorganic industries are included in the course. Prerequisites, Chemistry courses 1, 3 and 52 or their equivalent. Five hours credit.

Course 55. WATER ANALYSIS. A course in the analysis of water for sanitary and boiler purposes. Primarily a laboratory course, but including also lectures and assigned readings on the methods used and the interpretation of results. Laboratory fee for materials used. Two, three, or four hours credit. Prerequisite, quantitative analysis.

Course 56. FUEL ANALYSIS. Both laboratory and classroom work on the analysis of coal, coke, fuel gases and oils, including the use of the calorimeter in determining the heat values of fuels. Laboratory fee for materials used. Prerequisite, quantitative analysis. Two hours credit.

Course 57. LEAD AND ZINC ASSAYING. Volumetric and gravimetric methods for the estimation of lead and zinc in ores. Laboratory fee for materials used. Prerequisite, quantitative analysis. Two hours credit.

Course 58. TESTING OF OILS. This course includes the usual chemical tests for the examination of the various fuel and lubricating oils used in our industries. The over-point, end-point, and flash and fire-point, together with viscosity and friction coefficients, are studied. Laboratory fee for material used. Two hours credit.

Course 59. AGRICULTURAL CHEMISTRY. This course is arranged for students of agriculture, and consists of a study of the chemical changes involved in soil fertility and plant growth, the analysis of various plant products and fertilizers, and the study of problems of agriculture of a chemical nature. Laboratory fee for material used. Two or three hours credit.

Course 60. TEXTILE CHEMISTRY. This course deals with the chemical examination and identification of the different textiles and a brief study of dyeing. Prerequisite, Chemistry 1. Laboratory fee for material used. Two hours credit.

Course 61. HOUSEHOLD CHEMISTRY. This course consists in the application of chemistry in the household, involving sanitation, cleaning and removal of stains. Prerequisite, Chemistry 1. Laboratory fee for material used. Two hours credit.

Course 62. PHYSIOLOGICAL CHEMISTRY. This course consists of a study of the chemical changes involved in the cooking, digestion and absorption of foods; the chemistry of the blood and tissues of the body. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Laboratory fee for material used. Two hours credit.

Course 63. CHEMISTRY OF NUTRITION. This course consists of a study of the composition of the different classes of food, their function in nutrition, dietaries, and food economy. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Laboratory fee for material used. Two hours credit.

Course 64. HISTORY AND METHODS IN PHYSICAL SCIENCE. This is a course of lectures given by the different teachers in the department. These lectures consist of a nontechnical discussion of the most important discoveries in the physical sciences. The applications of these principles for efficiency is emphasized. One, two or three hours credit according to the work done. Prerequisite, 15 hours Physical Science.

Course 67. ORGANIC ANALYSIS. Recitations and laboratory work in the analysis of food products, medicinal preparations, paints, varnishes, etc. Prerequisites, Courses 51 and 52 or their equivalents. Laboratory fee for material used. Two, three or five hours credit, depending on the amount of work done.

PHYSICS.

Course 21. GENERAL PHYSICS. Designed for those who wish a brief course in college physics and who have not had high-school physics. This course is preparatory to other courses in physics and is required of students who have not had a unit of high-school physics or its equivalent. It includes a rapid survey of all the branches of physics, interspersed with demonstrations and laboratory exercises. Not open to those having a unit of high-school physics. Five hours credit.

Course 22. MECHANICS AND HEAT. This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in building, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, high-school Physics. Four hours credit.

Course 23. SOUND AND LIGHT. Lectures and laboratory work in the general theory of sound and light. This course with courses 31 and 33 constitute the equivalent of a one-year course in college Physics. Prerequisite, high-school Physics. Two hours credit.

Course 24. MAGNETISM AND ELECTRICITY. Theories and laws of magnetic and electric phenomena, with their application to modern appliances, operations, and machines. Prerequisite, high-school Physics. Four hours credit.

Course 25. MECHANICS HEAT AND SOUND. Lectures and laboratory on the general principles involved. Forces in structures and machine parts, elasticity and ultimate strength, laws of motion, heat measurements, sound phenomena. Prerequisite, high-school Physics. Five hours credit. (N. B. Offered summers alternately with course 26.)

Course 26. ELECTRICITY AND LIGHT. Electric and magnetic circuits. Electrical machinery for power, heat and light. Primary and storage batteries. Nature of light. Laws of reflection, refraction, simple lenses and optical instruments. Lectures and laboratory. Prerequisite, high-school Physics. Five hours credit. (N. B. Offered summers alternately with course 25.)

Course 27. ELECTRICAL MEASUREMENTS. Lectures and laboratory. Includes meter testing; the measurement of temperature coefficient of resistance; specific resistance of copper, iron, aluminum, etc.; the testing of iron for hysteresis and its measurement; the measuring capacity, inductance and earth's magnetic field; telephone line measurements; and wireless equipment measurement. Three hours credit.

Course 28. DIRECT-CURRENT MACHINE. Lecture and design. The theory of direct-current machine construction. Includes the theory of magnet design, both shunt and series and armature design. Two practical problems are given, one the design of a lifting electro magnet, and the other the design of a direct-current motor. Prerequisite, course 24 or its equivalent. Two hours credit.

Course 29. ALTERNATING-CURRENT MACHINERY. Lectures, design and laboratory. Advanced alternating-current machinery and alternating-current machine design. Some of the higher problems of alternating-current machinery are taken up in this course, such as alternating-current transmission line calculations and inductive interference in alternating-current transmission lines, transformer regulation, alternating current generator, voltage regulators, etc. Prerequisite, course 28. Four hours credit.

Course 30. ILLUMINATION. A study of the problems of illumination in the home, school, business house, and street lighting. It includes a study of the various types of light sources, shades, and reflectors and their adaptability for various classes of service. Prerequisite, course 23. Two hours credit.

Course 35. PLUMBING AND PIPE-FITTING. A study of the fundamental principles of plumbing and pipe-fitting and of modern sanitary appliances for the home. The course includes designs and practice work as well as recitations and lectures. Prerequisite, high-school Physics. Two hours credit.

Course 36. HEATING AND VENTILATION. The principles of operation underlying the various modern systems of heating and ventilation installed in homes and school buildings form the basis of this course. It includes practical problems in the designing of heating and ventilating systems for buildings. Prerequisite, high-school Physics. Two hours credit.

Course 37. ELECTRIC WIRING. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates of them, as well as the actual installing of "approved" circuits. Two or four hours credit.

Course 38. GAS ENGINES. A study of the types of construction and of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics, industrial activities, or in automobiles. Laboratory and lectures. Operating, repairing, and testing under various conditions included in laboratory work. Prerequisite, high-school Physics. Three hours credit.

Course 39. GAS ENGINE ELECTRICITY. A companion course to course 25. Electrical circuits of the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, magneto, lighting and ignition circuits, and to trouble-hunting in these parts. Prerequisite, high-school Physics. Two hours credit.

Course 40. ARMATURE WINDING. A practical course in the testing and repairing of defective and burned-out electrical machinery. Prerequisite, course 33. One or two hours credit.

Course 41. ELECTRIC SIGNS. A practical course in designing and installing electric signs. Prerequisite, high-school Physics. Two hours credit.

Course 42. ELECTRICAL INSTALLATION. The purpose of this course is the careful study of installation of dynamos and switchboards, together with the connection of the generators with the source of power, and the switchboard with its connection with the transmission wires. This is a very important course, dealing not only with the installation of the larger generators, but also the location and operation of motors of different sizes connected therewith. Two, three or five hours credit.

Course 43. STORAGE BATTERIES. The construction and operation of storage batteries is carefully studied. The charging of storage batteries receives special attention. The problems of repair are also considered. Storage batteries are being used more and more in electrical work, and the proper use and repair of them is of great importance to electrical workers in the fields where batteries are used. Two hours credit.

Course 70. THE TEACHING OF PHYSICS. Practice and theory. Texts, materials and methods for basis of study. Prerequisite, high-school Physics or course 30. Two hours credit.

Course 71. HOUSEHOLD PHYSICS. A course for girls interested in home economics. It includes an inquiry into physics as applied to the problems of sewage disposal, lighting, heating, ventilating, cooking, house cleaning, laundering, etc. A careful study is made of modern labor-saving, sanitary and economical appliances for the home. Prerequisite, high-school Physics or course 30. Two hours credit.

Course 76. WIRELESS TELEGRAPHY. The theory and practice of radio-communication. Prerequisite, course 33. Two, three, or five hours credit.

GEOLOGY.

Course 80. MINERALOGY. This is a brief course in the study of our common rocks and minerals. Easy physical and chemical tests for identification, together with crystal structure, is studied. The relation of the different types of soil and water as found in our state to that of the geological formations is emphasized. Two, three, or five hours credit.

Course 81. PHYSICAL GEOLOGY. This course is planned to acquaint the student with the work of the geologist and to enable him to appreciate the relations of this subject to our industrial life. Emphasis is placed upon the industrial and economic side of geology. Among the subjects considered may be mentioned the distribution and supply of fuels; the geologic processes in soil building; the raw material of many of our manufacturing industries; road building; and the making and reading of geologic maps, together with their economic value. Three hours credit.

Course 82. HISTORICAL GEOLOGY. This course begins with historical geology, and considers the lessons of history to be read in the different layers of rocks. Two hours credit.

Course 83. ECONOMIC GEOLOGY. As the name implies, this course deals with the economic resources of the United States from the view-point of geology. The mineral products, as iron and the other common metals, clays, coal, oil and gas, building stones, cement, materials, gypsum, fertilizers, water, and other products, are studied. The distribution of these resources, mode of occurrence, origin, uses, production and conservation are considered in this course. Two, three, or five hours credit.

COMMERCE.

(See section IX, page 237.)

DRAWING AND DESIGN.

(See section III, page 97.)

EDUCATION.

D. M. Bowen, Professor.
Edgar Mendenhall, Professor of Rural Education.
Frank Deerwester, Associate Professor.
Oscar W. Alm, Principal Junior Training High School.

A minimum of twelve hours in Education is required for a life diploma to teach in the elementary schools and the junior high schools of Kansas. A minimum of twenty hours is required for the Bachelor of Science Degree in Education. A major of thirty hours, exclusive of teaching, may be selected in education, and a minor of twenty hours in any other department in which a major is offered.

Junior College Courses. Course 1, Introduction to Education; course 2, Modern Education; course 3, Rural Education; course 4, Current Educational Problems; course 5, Industrial Education; course 6, Social Principles in Education; course 7, General Psychology; course 7*b*, General Psychology; course 8, Child Psychology; course 9, Principles of Education; course 10, Stories and Literature; course 11, Kindergarten Theory; course 12, Junior High School; course 13, Tests and Measurements.

Senior College Courses. Course 51, Administration; course 52, Educational Measurements; course 53, Rural Education; courses 54, 55, 58, Secondary Education; course 57, Educational Psychology; course 56, Social Psychology; course 59, Philosophy of Education; course 60, School Supervision; course 62, Principles of Vocational Education.

ADMINISTRATION AND SUPERVISION.

Course 1. Introduction to Education. Required in all life-certificate courses for teachers, except the course for rural teachers. The aim of this course is to acquaint the student with educational facts which should be the common knowledge of every one engaged in education. This course also furnishes necessary groundwork for more advanced subjects in education. Three hours credit.

Course 2. Modern Education. The purpose of this course is to introduce the student to the best in modern educational ideas and educational practice. As a basis for this course the essential facts of modern educational development will be reviewed. Three hours credit.

Course 3. Rural Education. This course is primarily for beginning teachers and teachers of limited experience and training. The organization of the rural school, the making of the program, problems of school discipline, school-room decoration and equipment. The rural-school playground will receive due consideration. Three hours credit.

Course 4. Current Educational Problems. A study of present-day problems in education. The course is based on current educational literature, and involves a discussion of modern ideas concerning the purpose of education, subject matter, motivation, educative processes, measuring results, reorganization of school systems and other kindred subjects. A library course, open to sophomores, juniors, seniors and teachers of experience. Four hours credit.

Course 5. Industrial Education. Designed to familiarize the student with the more professional aspect of the work of the teacher and supervisor of the industrial arts. The work consists of lectures, assigned readings, reports, etc. Among the various topics covered by the work are the following: Early educational history; Pestalozzi, effects of his work; education in Germany, France and England, with reference to industrial education and manual training; work of Victor de la Vos and the Russian system of manual training; Cygnæus, Salamon, and the sloyd movement; the beginning and development of manual training in the United States: aspect of the movement for the promotion of industrial education in the United States and abroad; legislation pertaining to industrial education; work of trade, vocational and technical schools studied and compared; sources of literature bearing on this phase of the public-school work. Second term, three single periods per week for eighteen weeks. Open only to students majoring in Industrial Arts. Three hours credit.

Course 6. Social Principles in Education. A course in educational sociology, dealing with the social laws and principles governing education. A socialization of the school, its administration, course of study, methods, and discipline. A discussion of the school as an instrument for social efficiency. Open to sophomores. Two hours credit.

Course 12. The Junior High School. Its development, aims and principles; its psychological and sociological foundations; its relation to the elementary and senior high school as an intermediate school. The problem of organizing, administering and supervising the different courses of study; the schedule and teaching force; moral, vocational and educational guidance; student activities, plant and grounds. Three hours credit.

Course 13. Tests and Measurements. A brief course for rural and elementary school teachers for the purpose of acquainting them with the standard scales and tests most used. Reading, Arithmetic, Spelling, Geography, Writing and History Scales and Tests will receive special attention. Tabulating and graphing educational data so as to render it more significant to pupils and teachers will also be made a part of this course. Two hours credit.

Course 53. Rural Education. This course will be organized for teachers of experience, principals of village and rural high schools, and supervisors of rural schools. The larger problems of rural education: (1) School and community; (2) hygiene and rural community sanition; (3) community recreation; (4) the rural church; (5) the rural home; (6) model curricula for rural common schools and rural high schools; (7) school consolidation; (8) the district and county plan of school organization. A basic text will be used, supplemented by reading the reports of state superintendent, school surveys and other appropriate material. Three hours credit.

Course 51. School Administration. A study of the larger problems of administration; the relation of the state to education; the various units of school organization, district, township, county, state and nation; the various administrative officers, their powers and duties; the teaching staff and present tendencies of education administration in America. Offered spring semester. Three hours credit.

Course 52. EDUCATIONAL MEASUREMENTS. An application of the principles of scientific management to the problems of the school; measuring the child, his physical and mental efficiency; the latest scientific tests for measuring the product of teaching arithmetic, English composition, handwriting, drawing and other school studies. Prerequisite, four hours Psychology. Three hours credit.

Course 54. ADMINISTRATION OF SECONDARY EDUCATION. The purpose of this course is to introduce the student to the vital problems of secondary education; the administration of secondary schools, courses of study, organization and management, social factors, school government and material equipment. Two hours credit.

Course 55. PRINCIPLES OF SECONDARY EDUCATION. This course is a combination of course 54, Administration of Secondary Education, and course 58, Psychology of High-school Subjects. Three hours credit.

Course 60. SCHOOL SUPERVISION. This course is intended to meet the requirements of principals, supervisors and superintendents in small cities. Its deals with the organization and supervision of the elementary school. Standards for estimating efficiency of teachers, improvement of teachers in service, records, programs and means of unifying the work of teachers in various grades; grading and promotion of children; tests, examinations, etc.; the function of the recitation, study and play periods. The Training School will serve as a laboratory for students in this course. Three hours credit. Open only to students of Junior and Senior College grade.

Course 61. SCHOOL SURVEYS. Prerequisite, course 52. A study of the Gary, Cleveland, St. Louis, Grand Rapids, Elyria, Ohio, and other leading school suryeys will be made a part of this course. When possible practical work will be done by the survey of schools most conveniently located. Three hours credit.

PSYCHOLOGY.

Course 7. GENERAL PSYCHOLOGY. The purpose of this course is to give the student a working knowledge of the accepted facts and general principles of psychology. In order to give a fair representation of the science as a whole, the descriptive, structural and dynamic phases of psychology are discussed. The point of view is on the whole functional, more attention being paid to what the mind does than to what it is. Discussions, outlines, readings, reports and simple experiments. Offered each semester. Three hours credit. Prerequisite for all other courses.

Course 7*b*. GENERAL PSYCHOLOGY. This course deals with the applied and dynamic phases of general psychology in its relation to education. An introduction to the field of educational psychology. For college freshmen who have had elementary psychology in high school. Two hours credit.

Course 8. CHILD PSYCHOLOGY. The aim of the course is to acquaint students with the most important established facts and principles of mental and physical growth of the child. To enable students to recognize types and individual differences among the children; to notice, interpret and deal properly with certain defects; to cultivate an intelligent sympathy with children. Two hours credit.

Course 9. PRINCIPLES OF EDUCATION. A course in the art of teaching, based principally upon the science of phychology. A discussion of the principles of psychology which are involved in teaching and their application in the work of the classroom, laboratory and shops. The following problems are analyzed and discussed, showing the interdependence of the various aspects of teaching method and the unity involved in mental development; attention and interest; the formation of habits; memory and the principles of memorizing; imagination, its development and use; thinking and reasoning; transfer of training; types of classroom exercises; how to study; individual differences. General psychology a prerequisite. Three hours credit.

Course 56. SOCIAL PSYCHOLOGY. A study of psychology of the origin and evolution of mental communities; the psychology of suggestion, imitation, fashion, custom, conventionality, sects, fads, crazes, mobs, and public opinion. Two hours credit.

Course 57. EDUCATIONAL PSYCHOLOGY. This course deals with the application of psychological principles of education. The laws of learning; the amount, rate and limit of improvement; the factors and conditions of improvement; mental discipline; mental fatigue; individual differences and their causes; and original tendencies of man. Discussions, outlines, readings and reports. Course in general psychology prerequisite. Three hours credit.

Course 58. PSYCHOLOGY OF HIGH-SCHOOL SUBJECTS. A course in applied psychology dealing with subjects in the high schools: mathematics, foreign languages, English, science, history, manual training, household arts. The problems of teaching students to study, and other secondary school problems. Two hours credit.

Course 59. PHILOSOPHY OF EDUCATION. An interpretation of education as an integral phase of the life process, as a phase of human endeavor. A discussion of certain fundamental problems of education from the viewpoint of philosophy. A study of the aim, content and method of education as determined by the philosophy of education. Open only to juniors and seniors. Two hours credit.

Course 62. PRINCIPLES OF VOCATIONAL EDUCATION. General Psychology a prerequisite. This course attempts to apply the fundamental facts of psychology to the problems of vocational education, to determine the basis in human nature for the purposes and methods of this type of education as given in shop, laboratory, and classroom. Three hours credit.

KINDERGARTEN.

Course 10. KINDERGARTEN THEORY. Taking the child as center of correlation, a study is made of his development, especially of the doctrine of kindergarten procedure as modified in Froebelian literature. The foundations for the work of the course are the student's memories of his own childhood, observation, and experience with children. A study is made of child play, methods of utilizing, etc., leading on the one hand to a study of the gifts, and on the other hand to a study of the occupations. Three hours credit.

Course 11. STORIES AND LITERATURE. A course designed to supply training for the work of story-telling in the kindergarten and primary grades. Practice and discussion in the art of story-telling are a part of the work. The sources of literature of the development of the myths are studied. Not only should the art of story-telling be developed in this course, but discrimination in the choice of stories for various uses of study; also the origin and meaning of myths, fairy tales and fables, and the classification, adaptation and dramatization of stories. The course is intended for those enrolled in kindergarten and primary, but may be profitably taken by any one desiring to learn the art of story-telling. Two hours credit.

THE TRAINING SCHOOL.

D. M. Bowen, Director.
Agen Allender, Kindergarten.
Lillian McLean, Primary.
Jane Carroll, Primary.
Nell W. Ayers, Intermediate.
O. W. Alm, Principal, Junior High School.
Jessie Lesslie, Junior High School.
Supervisors of Special Subjects.

The Training School consists of regularly organized classes from the Kindergarten to the ninth grade, inclusive. In addition many of the Senior High School classes are utilized for training purposes by students in Junior and Senior College classes.

All teacher-training is in general charge of the Director of Practice Teaching and records of such teaching are filed in his office.

The school is organized into the following departments: Kindergarten, Primary, Intermediate, Junior High School, and Senior High School.

Kindergarten. This course consists of two hours per day for one semester spent in the Kindergarten in observation, teaching and study of Kindergarten theory. This course will be continued a second semester by students specializing in Kindergarten work. Four hours credit.

Primary Teaching. The course requires one hour per day for a semester in the Primary Department in observation and teaching. In addition, lesson plans and lesson preparation must be made before coming to class. The student is required to meet the critic teacher or head of department one hour each week for conference. Required of all taking primary teachers' course. Course duplicated the second semester. Three hours credit.

Intermediate Grades. Requirements for this course are as follows: One hour per day for semester in observation and teaching in classroom under direction of critic teacher, one hour per week in conference with critic teacher and other student teachers, and the necessary time in preparing lessons and lesson plans. Three hours credit.

Rural Teaching. This is a combination in which the student will spend half the semester in observation or teaching in the primary grades, and the other half in teaching or observing in the intermediate or grammar grades; also opportunity for observing in standard rural school. The course is intended for those planning to teach in rural or other ungraded schools, and is open to high-school seniors. Three hours credit.

Junior High School. This school is in charge of a principal and two assistants. It consists of the seventh, eighth, and ninth grades. Students preparing to teach in Junior High Schools are assigned classes in subjects in which they are majoring under the direction of critic teacher. One hour daily for one semester. Three hours credit.

Senior High School. The Senior High School is in general charge of a principal from the Department of Education and the heads of various departments of the College. Students from the Senior College conducting high-school classes one hour per day for one semester under direction of departments in which such students are majoring receive three hours credit in Practice Teaching.

A minimum of three hours of Practice Teaching is required of all students receiving the Life Certificate. An additional three hours is required of all students completing the degree course. Such teaching to be in the Junior or Senior High School and in the subject in which the student is majoring. In courses requiring more than three hours of Practice Teaching, students who have had at least two years successful experience, may, upon approval of Department of Education, and head of department in which student is majoring, be exempt from more than the minimum amount of teaching.

ENGLISH DEPARTMENT.

ERMINE OWEN, Professor of English.
MARY ANDREWS, Assistant.
ELIZABETH LATHROP, Assistant.

Course 1. CONSTRUCTIVE ENGLISH. The formal side of English, both written and spoken. A study of the paragraph, of sentence forms, of punctuation, letter writing and formal notes. The entire course correlated with a study of American classics and the late war literature. Four hours credit. Open to freshmen.

Course 2. THE EPIC. A study of the Lesser Epic: "Sohrab and Rustum," "The Idylls of the King." The Great Epic: "The Iliad," "The Odyssey," "Paradise Lost." Four hours credit. Open to freshmen and sophomores.

Course 3. SHAKESPEARE. A critical study of the great dramatist as to technique, art, plot, ethics, with some study of the Elizabethian theater, and a close study of several of the greatest plays. Three hours credit. Open to all college classes.

Course 4. LITERARY CRITICISM. An intensive study of lyric poetry with reference to construction, style, art, spirit, unity, and consistency, with special attention paid to the intellectual, the imaginative and the emotional elements of the classic. Three hours credit. Open to sophomores and juniors.

Course 5. THE SHORT STORY. Construction work on plot, characterization and visualization, a critical study of some of the short-story masterpieces and others growing out of the great World War. Two hours credit. Open to freshmen and sophomores.

Course 51. HISTORY OF ENGLISH LITERATURE. The history of English literature from its beginning to the Puritan Age. Emphasis on "Beowulf," the evolution of the English language, Chaucer; an intensive study of Chaucer's "Prologue," and two of "The Canterbury Tales." Four hours credit.

Course 52. HISTORY OF ENGLISH LITERATURE. The history of English literature from the beginning of the Puritan Age to close of the Victorian Era. Milton's shorter poems, the classical school, and the Romantic Revival. Four hours credit.

Course 53. THE ENGLISH DRAMA. A study of the evolution of the drama from the miracle plays to the closing of the theaters by the Puritan Parliament. A study of Lodge, Green, Marlowe, Shakespeare, Johnson, Beaumont and Fletcher, Ford, Middleton, Webster, Massinger. Three hours credit. Open to juniors and seniors.

Course 54. EVOLUTION OF THE NOVEL. Richardson, Fielding, Smollet, Sterne, Austen, Bronte, Scott, Dickens, Thackeray, Eliot, Hawthorne, James, Howell. Three hours credit. Open to juniors and seniors.

Course 55. VICTORIAN POETRY. Appreciation and criticism of Browning, Tennyson, Arnold, Rosetti, Swinburne. Some attention to current poetry. Two hours credit. Open to juniors and seniors.

Course 56. THE ENGLISH ESSAY. Bacon, Montaigne, Arnold, Lamb, Ruskin, Macaulay, Carlyle, Fitch. Two hours credit. Open to juniors and seniors.

Course 57. CURRENT PROSE AND POETRY. An intensive study of the masterpieces of prose literature growing out of the World War. President Wilson's first "Lusitania note," his "Flag Day" speech; his speech to Congress asking for a declaration of war on Germany; speeches of Premiers Asquith, Lloyd-George, and Clemenceau; of President Poincaire, Secretary Lane, Gompers, and others. A careful reading of selected poems originating and inspired by the Great War. Two hours credit.

Course 58. JOURNALISM, NEWSPAPER REPORTING AND CORRESPONDENCE. Theory on the work of the reporter and correspondent. Practice in gathering news and news writing. Each student is required to cover one news assignment each week, besides working a regular "beat." A text and laboratory course. Three hours credit. Open to all college students. Three hours.

Course 59. JOURNALISM—EDITING. Instruction and practice in editing copy, correcting proof, writing headlines, making up, rewriting, and other editorial details. Open to any student having had course 58. Two hours credit.

Course 60. THE GREEK DRAMA. A study of both the representative masterpieces and the evolution of the Greek Drama—the mightiest original literary achievement of the human intellect. Æschylus, Sophocles, Euripides, Aristophanes. Three hours credit.

Course 61. MODERN DRAMA. A course in the appreciation of the modern drama. A short review of the evolution of the drama will be given for those who have not had course 53. Some of the authors: Ibsen, Maeterlinck, Phillips, Balasco, Zangwill, Kennedy, Tarkington, Wilson, Fitch, Herne, Howard, Miller, Burnett. Three hours credit.

Course 62. WORD STUDY. Etymology, Semantics, and Synonyms.

HISTORY AND SOCIAL SCIENCES.

G. W. TROUT, Professor History and Social Science.
O. F. GRUBBS, Associate Professor History.
J. W. BOWERS, Associate Professor History.
LILLIAN LUEHRS, Assistant Professor History.

Course 1. GREEK HISTORY. A general survey of ancient Greece from the earliest period to its conquest by Rome. Lectures, reports, discussions and library readings. Open to freshmen and sophomores. First semester. Two hours credit.

Course 2. ROMAN HISTORY. This course takes up Rome at her earliest date and follows her career to the fall of the western empire. Reports, discussions and library readings. Open to freshmen and sophomores. Second semester. Two hours credit.

Course 3. MEDIEVAL HISTORY. A survey of western Europe from the fall of Rome to the opening of the Renaissance. Open to freshmen and sophomores. First semester. Three hours credit.

Course 4. MODERN HISTORY. A brief course in the history of Europe from the opening of the Renaissance to the outbreak of the French Revolution. Open to freshmen and sophomores. Second semester. Three hours credit.

Course 5. ENGLISH HISTORY. A general survey of the whole range of English history down to the present time. Special attention to rise of English government and institutions and their relation to our own. Outlines will be used and special readings assigned, papers prepared and read before class. Five hours credit.

Course 6. AMERICAN HISTORY I. This is a thorough college course covering the subject of American history for mature students and teachers who may want to strengthen themselves in the teaching of the subject. Four hours credit.

Course 7. CONSTITUTIONAL HISTORY. A study of the evolution of the American constitution, its interpretation and application to the times. Two hours credit.

Course 19. OLD TESTAMENT HISTORY. This course is designed to cover the authorship and transmission of the books of the Old Testament to our time, together with the historic background surrounding the authors at the time of the writeup of these books. Offered two hours a week during the first semester. Two hours credit.

Course 20. NEW TESTAMENT HISTORY. This course covers the period of the writing and collecting of the several books of the New Testament, with a study of the authors and purposes of their messages. Offered two hours a week during the second semester. Two hours credit.

Course 21. CIVIL GOVERNMENT IN THE UNITED STATES. The purpose of this course is to study the structure and functions of the government of the United States, local, state, and national. Such topics will be considered as the constitutional development of American government, the powers and activities of various organs of government and administration, and proposed reforms within the field of American government. Special stress will be laid upon the relation of American state governments to contemporary economic and social problems. Five hours credit.

Course 47. THE SOCIAL TEACHINGS OF JESUS. This course is designed to furnish an opportunity for the student, in these days of great social changes and scientific study of human society, to discuss what Jesus taught as recorded in the New Testament concerning the special problems of his day, and their present-day application. Offered two hours a week. Two hours credit.

Course 51. INDUSTRIAL HISTORY. A careful study of our natural resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to the present time. Besides the use of a text the students are required to prepare papers and read them before the class for discussion. Offered three hours per week. Three hours credit.

Course 52. ECONOMICS. This course deals with the theories and principles of man's activities in the satiation of human wants. It applies these principles and theories to the production and consumption of wealth. It aims to lay well the foundations for advanced work along this line. Special subjects assigned to individual students for investigation and reports to the class. Offered five hours per week. Five hours credit.

Course 53. POLITICAL SCIENCE—COMPARATIVE GOVERNMENT. In this course we study the theories and functions of the modern state as exemplified in the leading nations of the world. Also careful observation of likenesses and differences of these states. Offered three hours per week. Three hours credit.

Course 56. MODERN EUROPE. Beginning with 1815, governmental change and progress of the countries of Europe up to 1870 are studied. Special emphasis is laid upon the rise of popular governments, the formation of political parties and the limitation of monarchies. Two hours credit.

Course 57. TEACHING HISTORY. Open to all students majoring in history or those who have had at least fifteen hours in history and expect to teach it. Offered two hours per week. Two hours credit.

Course 18. SOCIOLOGY. An introductory study of the nature, function and development or progress of society. The aim to familiarize the student with society and some of its problems and cultivate a desire to aid in the solution of these problems. Three hours credit.

Course 59. APPLIED SOCIOLOGY. In this course we endeavor to apply the principles of sociology to present-day problems. Course 58 is a prerequisite. Offered two hours per week during second semester. Two hours credit.

Course 60. HISTORY OF THE REFORMATION. This course is preceded by a brief survey of the rise of the Christian church, its institutions and doctrinal development. Special emphasis is laid upon the causes leading to and the great agents employed in the Reformation. Three hours credit.

Course 45. PARLIAMENTARY LAW AND PRACTICAL LEGISLATION. This course is to develop the ability of the student to preside over deliberative bodies creditably; also to inform him as to the actual practical methods employed in our legislative assemblies. It will consist of special drills and textbook work. Offered two hours per week. Two hours credit.

Course 62. BIBLE STUDY. This a course of one hour recitation per week in a careful study of the English Bible. Offered each semester. One hour credit.

Course 63. AMERICAN HISTORY II. This course covers the period from 1750 to 1829. It is a study of those forces and events which helped to create a national ideal and a national spirit. It deals with those contributions and political problems from within and from without which tended to weld our people into one sovereign state. Two hours credit.

Course 64. AMERICAN HISTORY III. This course is a study of the difficulties and dangers threatening the life of a nation, together with the forces that contributed to our marvelous progress. It covers the period from 1829 to date. Two hours credit.

Course 65. CURRENT HISTORY. A thorough study of current events in which we use the best periodicals and magazines for material. One hour a week. Open to all college students. One hour credit. Courses 62 and 65 are open to all classes.

Course 67. LATIN AMERICA. A brief study of the history and traditions of our neighbors to the South—Mexico, Central and South America—with emphasis upon their social, racial and economic development, and their relation to Europe and to the United States. Two hours credit.

Course 49. RURAL SOCIOLOGY. A study of rural life in its relation to its social centers, with special reference to the rural church, school and other social centers. Offered two hours per week. Two hours credit.

Course 69. FINANCIAL HISTORY OF UNITED STATES. A brief review of the methods of raising revenue in the United States, the nature of the circulating medium, and the relations of our banking systems to our national life, past and present. This course coördinates with course 51. Two hours credit.

Course 70. EUROPE FROM 1870 TO DATE. This course is to take up the political problems of Europe since the formation of the German empire and study these in reference to the Great War. Two hours credit.

Course 80. CHRISTIAN EVIDENCES. This course is a rational study of the evidences bearing upon the facts of Christianity as a life and saving factor in human society. Two hours a week. Two hours credit.

Course 85. ETHICS. This course is designed to help the teacher in placing before his pupils such rational standards of moral conduct as will be easily understood and readily accepted as the proper mode of conduct. It is not a technical course, but is made more practical and designed to be most helpful to the teacher in helping him to produce the right sort of standards of conduct. Offered two hours a week. Two hours credit.

Course 58. SOCIOLOGY. An introduction to the study of the nature, function and development of progress of society. The same as course 18, but more extended, reciting four times a week. This course is designed for those who have never had any work in Sociology and is a prerequisite to all other courses except course 18. Those having course 18 are not eligible for this course. Three hours credit.

Course 54. CITIZENSHIP. This course is designed to give the general survey of the relation of the citizen to the municipal, local, state, and Federal government, emphasizing the general organization of the various plans of the above-mentioned government, and the particular function of the citizen in each of these relations. Three hours credit.

HOME ECONOMICS.

(See section V, page 135.)

INDUSTRIAL ARTS.

(See section IV, page 113.)

LANGUAGES.

SAMUEL J. PEASE, Professor.
ERNEST BENNETT, Assistant Professor.

IMPORTANCE. In a very real sense, he who knows only his own country knows no country; he who knows only his own language knows no language; he who knows only one age knows no age. In addition to the gain in perspective, the study of foreign languages, especially in a normal college, should result in readiness in understanding the printed page, and increasing elegance, accuracy, judgment and clearness of expression, in English as well as in the foreign language studied.

An increasing number of Americans are coming into close contact with the French people, the French language, and French ideals through the interchange of students and teachers, the wider range of diplomacy, commerce, and the public-service professions.

The rapid growth of opportunity in every line in Spanish America demands more and more the study of the language, culture and modes of thought of its peoples.

Latin is *par excellence* the teacher's language, since from or through it have come mainly the foundations of modern thought, language, and institutions. Teachers in the field often find themselves under a heavy handicap in their teaching, especially of language work and English in the upper grades and high school, because of a lack of early preparation in Latin. The wider their experience the more they are aware of the undue size of their "blind spot."

CHOICE OF COURSES.

PREPARATION FOR GRADUATE WORK.

Students intending to do graduate work in any branch will do well to familiarize themselves with the requirements of the university in which they intend to work. The usual requirement in foreign languages is from two to four years' work, no credit being given for language work which must be made up. A reading knowledge of French and German is usually required as a prerequisite to the work for the degree of Doctor of Philosophy.

FOREIGN LANGUAGE MAJOR.

Students wishing to major in Foreign Languages for the bachelor's degree may select thirty hours in a single language (French), but ordinarily will select two languages for their main work. At least twenty hours should be selected from one language. The student must be careful to select a sufficient number of courses numbered 51 or higher. Courses 1, 2, and 10 in Latin, course 1 in French, German, or Spanish will not count as part of the major for the degree nor be included in the ten hours of the major group for junior high-school teachers, page 90, but may count toward a major for the life certificate in the general course, or as an elective for the degree. Those who wish to teach foreign languages in a junior high-school should receive their life certificate in the general course.

FREE ELECTIVE COURSES.

Courses 10 and 11 in Latin and courses 7 and 8 in French and Spanish are open to all students in the college, with no prerequisite; language courses 71 and 72 are open to all juniors and seniors without prerequisite.

CORRELATION WITH ENGLISH.

The following courses are especially recommended to students desiring to teach English or Latin-English in junior and senior high schools or the upper grades:

Epic (English course 2).
Word-study (English course 62).
Latin-English grammar (Latin course 10).
Latin in English (Latin 11).
Comparative Etymology (Language 71) for juniors and seniors.
Language Science (Language 72), for administrators and seniors.

LIBRARY.

The Normal library contains about 500 excellently chosen volumes relating directly to the work of the department, largely recent works in French and Spanish. The library also subscribes to *L'Illustration,* the *Modern Language Journal, South American,* the *Boletín de la Unión Panamericana, Classical Journal* and *Classical Philology.* The Pittsburg Public Library contains about 100 volumes in French, German, and Italian, and a number of miscellaneous foreign magazines.

FRENCH.

Course 1. ELEMENTARY. Part I of Fraser and Squair's French Grammar and about 200 pages of easy reading. Emphasis on forms and pronunciation. Simple composition and daily conversation based on the reading. Five hours credit.

Course 2. INTERMEDIATE. Fraser and Squair continued, with special attention to irregular verbs. Modern narrative prose and one easy play, about 300 pages in all. Composition and translation into French; much oral practice. Prerequisite, course 1 or one year of high-school French. Five hours credit.

Course 3. MODERN WRITERS. Reading of three or four masterpieces of French fiction and one important play. Discussion in French of texts read. Written summaries and other compositions. The subjunctive mode and the leading principles of syntax. Three hours credit. Students wishing five hours during their third semester of French may take course 11 at the same time. Younger students may repeat course 3 with profit, as the readings are changed from year to year.

Course 4. READINGS IN FRENCH HISTORY AND BIOGRAPHY. Conducted mainly in French. Three hours credit. Prerequisite, eight hours of French. Course 12 may be taken at the same time.

Course 5. THE MODERN THEATER. Prerequisite, course 3. Three hours credit.

Course 6. CLASSICAL DRAMA. Introduction to Corneille, Molière, Racine. Conducted in French. Prerequisite, course 2. Three hours credit.

Course 7. FRENCH LITERATURE BEFORE HUGO. Open lectures on the more important topics of French literature from its beginning to the close of the Revolutionary period. One hour credit.

Course 8. FRENCH LITERATURE SINCE HUGO. One hour credit.

Course 11. INTERMEDIATE COMPOSITION. Prerequisite, course 2. Two hours credit.

Course 12. CONVERSATION AND COMPOSITION. Conversation (Pattou) and free reproduction of stories. Two hours credit.

Course 51. ELEMENTARY COURSE FOR JUNIORS AND SENIORS. More rapid than course 1, assuming a knowledge of some other foreign language. Five hours credit.

Course 52. RECENT FRENCH LITERATURE. Five hours credit.

Course 53. HUGO. A study of his life and activity in various fields of literature. Reading of extensive selections from both his prose and his poetry. Four hours credit.

Course 54. MOLIERE. Reading of all his most important works and careful study of his life and times. Four hours credit.

Course 61. METHODS. Two hours.

Course 63. ADVANCED GRAMMAR AND COMPOSITION. Two hours.

GERMAN.

Course 1. ELEMENTARY. Bagster-Collins. First book in German lessons I to XXV; Bacon's Vorwaerts. Conducted mainly in German, but with frequent translation into English. Emphasis on forms and agreement. Five hours credit.

Course 2. INTERMEDIATE. Bagster-Collins completed. Reading of one simple play and about 200 pages of simple prose and poetry. Memorizing of songs and poems. Free reproduction of anecdotes, poems, and stories. Five (or three) hours credit.

Course 3. MODERN READINGS. Prose and poetry. Conducted mainly in German. Extensive reading of such authors as Storm, Keller, Grillparzer, Raabe, Heyse. Three hours credit.

Course 4. CLASSICS. Schiller's Wilhelm Tell, Goethe's Hermann und Dorothea, Lessing's Minna von Barnhelm. Prerequisite, courses 1 and 2, or equivalent. Three hours credit.

Course 9. SCIENTIFIC GERMAN. Reader, monographs, magazines. Translations and reports in English. Open to those who have had three semesters of college German; to others by special permission of the department. Two hours credit.

Course 12. ELEMENTARY COMPOSITION. Composition (Allen), conversation (Pattou). Completion of this course should enable the student to converse on most topics of everyday life. Should follow or be taken with course 2. Two hours credit.

Course 51. SCHILLER. Jungfrau von Orleans, Maria Stuart, poems. Prerequisite, four semesters of college German. Four hours credit.

Course 52. GOETHE. A study of Goethe's life, experience, and philosophy. Reading of part I of Faust, with a study of part II and the Faust literature. Prerequisite, four semesters of college German. Four hours credit.

LATIN.

Course 10. LATIN-ENGLISH GRAMMAR. A comparison of the grammar of Latin and English. Forms and simpler constructions. Derivation. Latin selections for memorizing. May be taken by students wishing to review the elements of Latin from the comparative standpoint. Three hours credit. No prerequisite.

Course 11. LATIN IN ENGLISH. A brief study of the influence of Latin on modern languages, especially English, from the standpoint of vocabulary, orthography, grammar, rhetoric, literature, law. Lectures, exercises, and assigned readings. Two hours credit.

Course 1. LATIN ELEMENTARY. Covers the same ground as courses 1 and 2 in high school. Five hours. May be divided, with additional reading, into two three-hour courses.

Course 2. CÆSAR. Covers the same ground as courses 3 and 4 in high school. Five hours credit, or with additional work, six.

Course 3. CICERO'S ORATIONS. Intensive study of Catiline I and IV, Manilian Law, Archias. Rapid reading in other orations. Composition, rhetoric, Roman public life. Five hours credit.

Course 4. VERGIL'S ÆNEID. Four books, with rapid reading of others. Mythology, scansion, memorizing of about 100 lines. Five hours credit.

Course 5. LIVY. Selections from Books I, XXI, and XXII. Follows Cicero or Vergil. Three hours credit.

Course 6 CICERO'S PHILOSOPHY AND LETTERS. De Amicitia, De Senectute, selected letters, advanced composition. Study of Cicero, the man. Roman private life. Prerequisite, 8 hours beyond course 2. Three hours credit.

Course 7. HORACE. Odes and Epodes, selected. Two hours credit.

Course 58. HORACE. Satires and Epistles. Two hours credit.

Course 51. SUPPLEMENTARY LATIN AND COMPOSITION. A study of the Latin used as supplementary reading and of high-school composition. Prerequisite, courses 5 and 6. Two hours credit.

Course 61. TEACHERS' COURSE. Objects, arguments, ways and means, knotty points, texts, illustrations, equipment. Prerequisite, eight hours beyond course 2. Two hours credit.

Course 62. PRACTICE TEACHING IN LATIN. Open to seniors who have had 10 hours beyond course 4. Three hours credit.

Language course 71. ADVANCED ETYMOLOGY. A consideration of the Latin, Greek and Anglo-Saxon elements of English vocabulary from the standpoint of comparative philology. Influence of Latin and Greek word formation and orthography on English. Effect of Latin grammar on English grammar and vocabulary. Three hours. Open to all juniors and seniors.

Course 72. LANGUAGE SCIENCE. Development of the language function in the individual. Capacities and adaptabilities of children and adults at varying ages. The factors of linguistic development. Relation to the other functions of the mind. Results of different types of curricula. Place of the ancient and modern languages and literatures in the development of the language function and in the modern school. Three hours. Should be preceded by Child Study and Educational Measurements. Especially for superintendents, principals, and teachers majoring in Education, English or Foreign Languages.

SPANISH.

Course 1. ELEMENTARY. Hills and Ford's First Spanish Course, Pittaro's Spanish Reader. Forms and syntax; practice in speaking and writing. Five hours credit.

Course 2. INTERMEDIATE. Hills and Ford completed. Extensive reading and conversation. Idioms and subjunctives emphasized. Five (or three) hours credit.

Course 3. MODERN NOVEL. Extensive reading of a more advanced type. Conversation and narrative. Conducted in Spanish. Three hours credit.

Course 4. MODERN DRAMA. Rapid reading of nineteenth century dramas. Conducted in Spanish. Three hours credit.

Course 5. SPANISH-AMERICAN LITERATURE. Three hours credit.

Course 7. OUTLINE OF SPANISH LITERATURE. Text: Fitzmaurice-Kelly's Spanish Literature. Lectures alone, open to all, one hour credit; with readings in English or Spanish, three hours credit.

Course 8. OUTLINE OF LATIN-AMERICAN LITERATURE. Text: Coester's Literary History of Spanish America. Lectures alone, open to all, one hour credit; with readings in English or Spanish, three hours credit.

Course 9. COMMERCIAL SPANISH. Reading, correspondence, conversation. Three hours credit.

Course 51. JUNIOR AND SENIOR BEGINNING COURSE. More rapid than 1. Five hours credit.

Course 52. MODERN READINGS. Three hours credit.

Course 53. THE NOVEL. Study of its development. Four hours credit.

Course 54. THE DRAMA. Comparison of the drama of the Golden Age with that of the modern period. Four hours credit.

MATHEMATICS AND APPLIED MECHANICS.

J. A. G. Shirk, Professor.
C. O. Van Dyke, Associate Professor.
L. E. Curfman, Associate Professor.
Jack Doty, Laboratory Assistant in Applied Mechanics.

Scope of Work. The department offers the usual courses in collegiate mathematics, and also many courses of an industrial and vocational nature. Some of these latter courses do not require an extended mathematical training as a prerequisite, and are intended to aid young men in shop problems and young women in the various vocations which they usually enter. Many of these technical courses demand considerable mathematical knowledge before they can be studied to an advantage, and consequently those courses which furnish the foundation for them are required as prerequisites. Each course has a statement of the purpose of the course and the other subjects required before entering it.

EQUIPMENT.

Mathematics. The department has a good collection of models in wood and string, illustrating the various geometrical figures. The surveying equipment includes two engineer's mountain and mining transits, one engineer's wye level, one architect's and builder's level, one farm level, levelling rods, range poles, tapes, planimeters, protractors, and other minor instruments and accessories. The other industrial courses in mathematics are rapidly being provided with drawings of machine parts, models of machines, and in many cases the actual machines, for illustrating the computation involved. For the study of calipers and the slide rule, large models are provided which are easily seen by the entire class.

Astronomy. Students of Astronomy have the use of a twelve-inch reflecting telescope of excellent optical properties. During the spring and summer terms the entire student body have an opportunity of viewing the moon and other celestial objects by means of this instrument.

Testing of Materials. A forty thousand pound Reihle Universal Testing Machine is available for the study of the strength of wood, metals, concrete, and other materials in tension, compression, and shear. Beams and columns not exceeding three and a half feet in length may be tested for the safe loads they will carry. Reënforced concrete is given particular attention on account of its universal use.

Steam Laboratory. The steam laboratory is equipped with several steam engines of various types for the study of governors, valve setting, steam consumption, indicated horsepower, and break horsepower. The auxiliary equipment comprises a dead weight gauge tester, steam engine indicator, condensers, a transmission, dynamometer, prony, brakes, pressure and vacuum gauges, injectors, boiler feed pumps, and other minor accessories.

Hydraulic Laboratory. The hydraulic laboratory is equipped with a testing tank for three-inch centrifugal pumps, and the necessary gauges, dynamometers, and other instruments used for testing pumps and water motors.

LIBRARY.

The library is well supplied with excellent books on Mathematics, Astronomy, Machinery, Surveying, Water Supply, Sewage Disposal, besides a well-selected list of good magazines on these subjects.

ADVICE AS TO CHOICE OF COURSES.

(*a*) Those wishing to qualify as teachers of mathematics in Junior High Schools by the end of the sophomore year are advised to take courses 1 to 7 and course 58.

(*b*) Candidates for the degree with Mathematics as a Major are advised to take courses 1 to 7, 51, 54, 55, 56, 57, 58 and elect from the other courses offered such as may be desired.

(*c*) Students majoring in Physical Science who expect to take advanced courses in Physics and Chemistry are advised to take courses 1 to 7, 54 and 55.

FOREIGN LANGUAGE.

Those students who wish to specialize with a view to a career in teaching and research in mathematics should acquire a reading knowledge of French and German during their undergraduate course.

Course 1. Plane Geometry. The general properties of plane rectilinear figures; the circle and the measurements of angles; regular polygons; solution of numerous original exercises and practical problems. Open only to students not offering geometry for entrance. Three hours credit.

Course 2. Solid Geometry. Elements of solid geometry; properties and measurements of surfaces and solids. Open to all students not offering solid geometry for entrance. Two hours credit.

Course 3. Advanced Algebra. This course is open only to those students who have not taken algebra III in their high-school course. It includes a review of linear and quadratic equations, radicals, involution, evolution, progressions, logarithms, and imaginaries. Two hours credit.

Course 4. College Algebra. Rapid review of elementary algebra; graphic representation; complex numbers; series, logarithms; theory of equations; Horner's method. Three hours credit. Prerequisite, one and one-half units of high-school Algebra, and one unit of Geometry.

Course 5. Plane Trigonometry. The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two hours credit. Prerequisite, two units of high-school Mathematics, or course 8.

Course 6. Analytical Geometry. The straight line; circle; elements of parabola, ellipse and hyperbola; polar coöordinates; higher plane curves; elements of solid analytical geometry. Five hours credit. Prerequisite, course 4 and 5.

Course 7. Calculus. Differential calculus; fundamental principles; derivatives; rates; applications to mechanics; maxima and minima; indeterminates. Integral calculus: intergation; definite integrals; applications to lengths, areas and volumes; moment of inertia; fluid pressure. The student is taught the use of tables of integrals in performing integrations. Five hours credit. Prerequisite, course 6.

Course 8. Industrial Mathematics. This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks; mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; house building; power transmission; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit. Prerequisite, two units of high-school Mathematics, one unit of Physics, or an equivalent experience in Mechanic Arts.

Course 9. VOCATIONAL MATHEMATICS. This course is designed especially for women and contains samples of problems from all occupations that women are likely to enter, from the textile mill to the home. Food computations; house construction; house furnishing; dressmaking and millinery; arithmetic for office assistants, sales girls, cashiers and nurses; and a thorough drill in the metric and English systems of weights and measures. Three hours credit.

Course 10. TEACHING OF ELEMENTARY MATHEMATICS. Essential features of courses in mathematics as far as the eighth grade. Principles and methods of teaching arithmetic and the allied mathematics of the elementary schools. The course will be presented with outlines with reference to historical material and the proper balance of abstract and concrete work. The aim is to study those topics likely to be introduced into the curricula of the first eight grades and to show how to relate mathematics to the child's everyday life and his future needs. Three hours credit.

Course 11. COMMERICAL ALGEBRA. This course is essentially an elementary course in the theory of investments, such as annuities, amortization, depreciation, bond valuation, and life insurance. These calculations are algebraic in character and demand a familiarity with algebraic processes. This course presupposes the equivalent of one year of high school algebra, and the additional algebraic preparation needed is derived from a part of this course. Commercial students and general college students who desire a knowledge of the processes of modern business will find the work interesting and profitable. Three hours credit.

Course 12. DESCRIPTIVE GEOMETRY. Solution of problems relating to geometrical magnitudes in space and their representations by drawings. Execution of a large number of original exercises. Two class periods and two drafting periods per week. Three hours credit. Prerequisite, plane Geometry.

Course 13. STRENGTH OF MATERIALS. A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shafting and reinforced concrete, resilience of materials. Two hours credit. Prerequisite, course 5 or 8.

Course 14. CEMENT LABORATORY. The student is taught the standard requirements for cement, and learns to make the tests to determine whether a particular lot of cement fulfils the requirements. One hour credit.

Course 20. MECHANISM. A study of the motion of machine parts and of methods of transmission of motion by means of links, belts, gears, and cams. This work is related closely to the machine motions used in the steam engine and various shop machines. Two hours credit.

Course 21. ELEMENTARY STEAM POWER PLANTS. A brief study of the general problems of steam power generation; fuels, combustion and steam generation; a study of boiler and engine types; engine mechanisms and power plant auxiliaries; laboratory practice in testing of steam machinery. Three hours credit.

Course 22. STEAM TURBINES. A special study of the different types of steam turbines with the auxiliary apparatus used with them. Inspection trips to power plants using these different types of turbines. Two hours credit.

Course 23. Hydraulic Machinery. An elementary course in the theory and operation of water power and pumping machinery. Two hours credit. Prerequisite, course 41.

Course 24. Refrigeration. A study of the construction and operation of the principal types of refrigerating machinery as used in cold-storage plants and in the manufacture of artificial ice. Inspection trips to plants using these types of machinery. Two hours credit.

Course 30. Elementary Surveying. A brief course in the use of surveyor's instruments; laying out of walks, drives, ditches, and buildings; calculation of cuts and fills; elements of land surveying. Prerequisite, Plane Trigonometry. Three hours credit.

Course 31. Higher Surveying. Practice in taking topography by transit and stadia, triangulation, measurement of base lines. A topographical survey of an area is made and the resulting contour map constructed from the data obtained. Prerequisite, Elementary Surveying. Three hours credit.

Course 32. Mine Surveying. Instruments and methods used for underground traverse and connection surveys; shaft plumbing and special problems. Field work includes the survey of tunnels under campus and actual mine surveys. Prerequisite, Elementary Surveying. One hour credit.

Course 33. Railway Surveying. A study of the methods used in laying out and constructing railways, with field practice sufficient to familiarize the student with these operations; calculation of waterways; laying out of bridges, turnouts, and easement curves. Prerequisite, Elementary Surveying. Two hours credit.

Course 40. Drainage. An elementary study of surface and underground drainage as applied to farms and country roads, taking into account rainfall, slope of ground, drainage area, character of soil, etc. The student is taught how to plan and construct a simple drainage system. One hour credit.

Course 41. Hydraulics. The study of the laws governing the action of liquids in pipes and their flow through pipes and over weirs. The types of pumping and hydraulic power machinery with special reference to the uses of pumps in removing water from mines. Two hours credit.

Course 42. Graphic Statics. The properties of equilibrium polygons and other methods of representing the actions of forces, with application to the determination of stresses in beams, trusses, and arches. Three hours credit. Prerequisite, Strength of Materials.

Course 43. Roads and Pavements. An elementary course dealing with the materials and methods of construction of the various types of country roads and city pavements commonly found in Kansas. Three hours credit.

Course 44. Masonry. An elementary course dealing with the various materials used in masonry and concrete, and their application to the construction of foundations, piers, abutments, dams, retaining walls, culverts, and bridges. Prerequisite, courses 13 and 42. Two hours credit.

Course 45. Sewers. An elementary course in design and construction of sewers and storm drains, and an introduction to the problem of sewage disposal. Prerequisite, course 41. Two hours credit

Course 46. Water Supply. A study of the problems of water supply for rural homes and cities, with special reference to the cities of Kansas; purification of water; types of water systems. Lectures and inspection trips. Two hours credit. Prerequisite, course 41.

Course 47. REENFORCED CONCRETE. A course in the theory and practice in the design of reënforced concrete beams, slabs, columns, arches, retaining walls, and other forms of reënforced concrete construction. Prerequisite, courses 13 and 42. Two hours credit.

Course 51. MATHEMATICAL THEORY OF INVESTMENT. A course for the students of business and public affairs. Interest, annuities, amortization, sinking funds and depreciation, building and loan, and life insurance. Two hours credit. Prerequisite, College Algebra.

Course 52. DESCRIPTIVE ASTRONOMY. A general course in descriptive astronomy, dealing with the solar system and theories regarding its evolution; nebulæ; comets; meteors; measurements of the earth; determination of standard time. Two hours credit. Prerequisite, High-school Algebra, Geometry and Physics.

Course 53. HISTORY OF ASTRONOMY. A study of the development of astronomical theories and ideas from those of the ancients to the modern conceptions. Observations of the apparent motions of the sun, moon and planets. Two hours credit. Prerequisite, Descriptive Astronomy.

Course 54. ADVANCED CALCULUS. This course is intended for those who wish a better knowledge of calculus. It includes center of gravity; moments of inertia; center and radius of curvature; series; expansion of functions; successive and partial differentiation and integration; differential equations; hyperbolic functions; solution of higher equations; miscellaneous practical applications. Three hours credit. Prerequisite, course 7.

Course 55. THEORETICAL AND APPLIED MECHANICS. A study of the laws of statics and dynamics; action of forces upon bodies and the resultant motions; centers of gravity; moments of inertia; work and energy; impulse; momentum and impact; friction and lubrication; centrifugal force and the balancing of machines. Three hours credit. Prerequisite, course 7.

Course 56. FUNDAMENTAL CONCEPTS OF MATHEMATICS. A study of definitions and properties of the different kinds of numbers; irrationals and limits; transcendental numbers; complex numbers; fundamental concepts of geometry with a brief discussion of noneuclidian geometries; logic of mathematics. Two hours credit. Prerequisite, twelve hours of College Mathematics.

Course 57. HISTORY OF MATHEMATICS. The growth and development of mathematics from the historical standpoint. The development of the applications of mathematics to practical affairs. This course also includes a study of the content of present courses in arithmetic, algebra, geometry, unified mathematics. Applied mathematics courses and their value in industrial education. Two hours credit. Prerequisite, fourteen hours of College Mathematics.

Course 58. TEACHING OF SECONDARY MATHEMATICS. The essential features of courses in Mathematics designed for junior and senior high-school schools. Methods of presenting the principles of these subjects. Prerequisite, fourteen hours of College Mathematics. Two hours credit.

SECTION III.

Life Certificate Courses.

THE FACULTY.

William A. Brandenburg, Ph. B., President.

G. W. Trout, A. B., A. M., Dean of College; Professor of History and Social Sciences.

Odella Nation, B. S., Librarian; Instructor in Library Methods.

Eulalia E. Roseberry, B. S., Professor of Geography.

James Anderson Yates, B. S., M. S., Professor of Chemical and Physical Sciences.

Ermine Owen, M. A., Professor of English.

D. M. Bowen, B. A., Professor of Education.

Oris P. Dellinger, A. B., Ph. D., Professor of Biology.

J. A. G. Shirk, M. S., Professor of Mathematics and Applied Mechanics.

A. H. Whitesitt, B. S., Professor of Industrial and Applied Arts.

Adela Zoe Wolcott, Ph. B., A. M., Professor of Home Economics, and Joint Director.

Margaret Coventry, A. B., Assistant Professor Physical Sciences.

William Edgar Ringle, A. B., Associate Professor of Biology.

F. H. Dickinson, Assistant Professor of Industrial Arts.

Hattie Moore-Mitchell, A. M., Professor of Methodology, and Dean for Women.

E. F. Sholtz, B. S., Director of Commerce.

Annie Marriott, B. S., Assistant Professor of Domestic Science.

Walter McCray, Director of Music.

O. F. Grubbs, A. B., B. S., Associate Professor of History.

R. Hesselberg, Professor of Violin.

Charles R. Wasser, Jr., Assistant Professor of Industrial Arts.

Samuel J. Pease, M. A., Professor of Languages.

Vivian Atwood, Assistant Professor of Applied Arts.

Ernest Bennett, B. S., Assistant Professor of Languages.

Edgar Nelson Mendenhall, Ph. B., Professor of Rural Education.

C. O. Van Dyke, M. A., Assistant Professor of Mathematics.

Edith E. Casseday, Assistant Professor of Home Economics.

George V. Emery, A. B., Associate Professor of Physical Sciences.

Anne Caseley, A. B., Assistant Professor of History.

Wm. H. Matthews, Instructor in Physical Sciences.

Jessie C. Leslie, B. S., Critic Teacher Junior High School.

Anthony Stankowitch, Professor of Piano.

Elizabeth Hallenbeck Gilbert, Voice Instructor.

Walter S. Lyerla, B. S., Instructor in Commerce.

Winona McLatchey, Instructor in Public School Music.

Preston E. Reed, A. B., Associate Professor of English.

Esther Stewart, Instructor in Piano.

L. C. Guffey, Instructor in Commerce.

Bertha A. Bennett, B. S., Director of Physical Education for Women.

Ethel Mae Hill, B. S., Assistant Director of Physical Education for Women.

John H. Bowers, Ph. D., LL. B., Associate Professor of History.

Frank Deerwester, A. B., Pd. M., Pd. D., Associate Professor of Education.

H. T. James, Professor of Industrial Arts.

Evelyn Joan Metzger, Assistant Professor of Drawing.

Nora Neal, Piano Instructor.

Henriette Pribnow, B. S., Assistant Professor of Home Economics.

Laura L. Remer, Primary Critic Teacher.

Anne Den Bleyker, Primary Critic Teacher.

Agnes Saunders, A. B., A. M., Professor of Home Economics, and Joint Director.

G. W. Weede, B. S., D. D. S., Director of Physical Education and Athletics for Men.

Ernest Hagler, Automobile Instructor.

A. T. Dunham, B. S., B. Met., Associate Professor Chemical and Physical Science.

Paul J. Alyea, Student Assistant in Physical Education.

Elsie Leitch Bowman, Associate Professor of Drawing and Applied Arts.

Elizabeth P. Moulton, Assistant Professor of Biology.

H. H. Hall, A. B., Assistant Professor of Biology.

H. V. Hartman, Assistant Professor of Industrial Arts.

Louise B. Jordan, Ph. B., Assistant Professor of Home Economics.

Jane Cape, B. S., Assistant Professor in Home Economics.

Lois L. Goff, A. B., Y. W. C. A. Secretary.

Elizabeth Helen Fleeson, M. A., Assistant Professor of Biology.

Madge M. Locke, Assistant Librarian.

Majory Jackson, Instructor in Voice.

Helen Clare Gibson, Instructor in Piano.

Agnes M. Allender, Primary Critic Teacher.

Elizabeth A. Lathrop, A. B., Assistant Professor of English.

Lawrence Everett Curfman, B. S., Assistant Professor of Mathematics and Applied Mechanics.

May G. Long, Director Physical Education for Women.

Regina Frank, Assistant Director of Physical Education for Women.

Ann Helen Carlton, Assistant Librarian.

Bessie L. Ashton, B. S., M. S., Assistant Professor of Geography.

John R. Pelsma, B. S., A. B., Ph. M., M. D., Professor of Public Speaking.

Jane M. Carroll. B. S., Primary Critic Teacher.

Ralph W. Erskine, Assistant Professor Industrial Arts.

Mary E. Andrews, A. B., Assistant Professor of English.

Nelle Wren Ayers, A. B., Intermediate Critic Teacher.

Charles Foster Kopp, Assistant Professor in Industrial Arts.

Frank J. Dobrovolny, A. B., Assistant Professor in Physical Sciences.

Elmer E. Jones, B. S., Assistant Professor Physical Sciences.

Lillian Luehrs, A. B., Assistant Professor History.

LIFE CERTIFICATE COURSES.

The following courses are outlined for those students seeking a life certificate to teach in some special field of elementary school work. Candidates for these courses must offer at least 15 units of high-school work, or its equivalent, for entrance requirements.

KINDERGARTEN COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
English	4	General Psychology	3
Physiology	3	Teaching	4
Elementary Drawing	2	Public-school Music	2
Introduction to Education	3	Stories and Literature	2
Physical Education	1	Primary Geography	2
Elective	3	Physical Education	1
		Elective	2
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
American History	4	Modern Education	3
Elementary Arts	2	Child Psychology	2
Primary Methods	2	Nature Study	2
Primary Teaching	3	Kindergarten Theory	3
Elective	4	Elective	5
	15		15

PRIMARY TEACHERS' COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
English	4	General Psychology	3
Physiology	3	Primary Methods	2
Introduction to Education	3	Public-school Music	2
Primary Drawing	2	Nature Study	2
Primary Methods	2	Elementary Arts	2
Physical Education	1	Physical Education	1
Elective	1	Elective	4
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Child Psychology	2	Modern Education	3
American History	4	Primary Geography	2
Teaching (Kindergarten)	3	Stories and Literature	2
Science	2	Primary Teaching	3
Elective	4	Play and Playground	2
		Elective	3
	15		15

INTERMEDIATE TEACHERS' COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
English	4	General Psychology	3
Physiology	3	Physiography	3 or 5
Industrial Art	2	Grade Methods	2
Introduction to Education	3	Public-school Music	2
Grade Methods	2	Industrial Art	2
Physical Education	1	Physical Education	1
Elective	1	Elective	3 or 1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
History	4	Mathematics	3
Nature Study	2	Modern Education	3
Teaching	3	Playground	2
Electives	4	Nature Study	2
Science	2	Elective	5
	15		15

RURAL TEACHERS' COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Constructive English	4	Psychology	2
Rural School Management (3)	3	American History	4
Nature Study or Geography	2	Physiology	3
Penmanship—Conditional	1	Methods	2
Mathematics (10)	3	Playground	2
Physical Education	1	Elective	3
Public School Music	2		
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
General Science	2	Public Speaking	3
Rural Education (15 or 16)	2	Rural Education (53 or 62)	3
Rural Sociology	2	Parliamentary Law (45)	2
Rural Agriculture	2	Home Economics or Industrial Arts	3
Rural Teaching	3	Elective	4
Elective	4		
	15		15

Students who are not high-school graduates, having taught successfully for five years and holding a First-grade County Certificate, on entering may receive a Three-year Certificate on completion of the first year of the Kindergarten, Primary, Intermediate Grade Teachers' or Rural Teachers' courses and eight additional hours, or a Life Certificate on completion of the two-years' courses above mentioned and sixteen additional hours from the following subjects:

	hrs.		*hrs.*
General Chemistry	5	General Biology	5
German or French	8	History	4
Sociology	5	Economics	5
Mathematics	4	Home Economics	8
Industrial	8	Agriculture	4
Commerce	4	Education	4
Physiography	5		

JUNIOR HIGH SCHOOL OR DEPARTMENTAL TEACHING.

GENERAL REQUIREMENTS.

	hrs.
English	4
Education	14
Physical Education	2
	20

COURSE REQUIREMENTS.

A major group of 10 hours each from any two subjects in which a major is offered:

	hrs.	
English	10	20
History	10	
Biological Science	10	
Physical Science	10	
Mathematics	10	
Languages	10	
Household Economics	10	
Industrial Arts	10	
Geography	10	

A minor group of 12 hours selected from the following:

	hrs.	
Grade Methods	4	12
Play and Playground	2	
General Science	2	
Elementary Sociology	3	
Public Speaking	3	
Advanced Civics	3	

AGRICULTURE COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
General Agriculture	3	Agronomy	5
English	4	Psychology	3
Biology I	3	Elementary Education	3
Manual	4	Biology II	3
Physical Education I	1	Physical Education	1
	15		15

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Soils and Fertilizers	5	Agriculture	4
Animal Husbandry	3	Teaching	3
Chemistry	5	Modern Education	3
Methods	2	Genetics	2
Elective	1	Electives	4
	16		16

INDUSTRIAL PHYSICS COURSE.

Students by choosing his electives in this course under the direction of the head of the department may qualify for teaching science in the rural high schools.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Chemistry (1)	5	Constructive English	4
Industrial Mathematics	3	Psychology	3
General Physics	5	Storage Battery	2
Physical Education	1	Gas Engines	3
Electives	2	Physical Education	1
		Electives	3
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Education	4	Auto Electricity	2
General Methods	2	Electric Wiring	2
Electric Wiring	2	Teaching	3
Electives	7	Electives	8
	15		15

PUBLIC SPEAKING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Essentials (1)	3	Oral Reading (2)	3
Argumentation (3)	2	Public Speaking (4)	2
Dramatic Art (5)	3	Parliamentary Law (45)	2
Physical Education (1)	1	Physical Education (2)	1
Psychology (7)	3	Introduction to Education (1)	3
Electives	3	Electives	3
	15		15

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Interpretation (7)	3	Platform Readings (52)	3
Extempore Speaking (9)	2	Oratory (54)	2
Story Telling (11)	2	Seminar (56)	2
Modern Education (2)	3	Child Psychology (8)	2
Electives	6	Electives	7
	16		16

GEOGRAPHY.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Physiography	3 or 5	General Science	2
English I	4	Geography Am. History	3
Biology II	4	General Psychology	3
Physical Education	1	General Mathematics	2
Electives	4 or 2	Physical Education	1
		Electives	4
	16		15

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Industrial or Commercial Geography	3	Modern Education	3
Elementary Education	3	Sociology	3
American History I	4	Contingent Study:	
Teaching	3	Geography 11, 51 or 52	3 or 4
Elective	3	Geography Methods	3
		Electives	2 or 3
	16		15

COMMERCE COURCE.

FRESHMAN YEAR.

Students who are high-school graduates or equivalent, upon completion of the course in Commerce, and who elect Psychology 3 hours, Methods 2 hours, Modern Education 3 hours, Practice Teaching 3 hours, and elective 3 hours in Education, will be entitled to a Life Certificate in Commerce. Those who do not desire a Life Certificate in Commerce, see course on page 238. Students pursuing degree courses may elect 8 hours of commerce work.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Bookkeeping (1)	4	Bookkeeping and Accounting (2)	4
Business Arithmetic	3	Commercial Algebra (11)	3
Commercial Geography (6)	3	Business Law (3)	2
Penmanship (4)	1	Penmanship (5)	1
Electives	4	Parliamentary Law (45)	2
Physical Education	1	Electives	3
		Physical Education	1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shorthand (6)	5	Dictation and Office Practice (7)	5
English (1)	4	Epic (2)	4
Commercial Methods (10)	1	Salesmanship (11)	2
Typewriting (8)	2	Typewriting (9)	2
Electives	4	Electives	3
	16		16

DRAWING SUPERVISION.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Primary Drawing and Handwork (3),	4	Intermediate Drawing (8)	4
Bookbinding	2	Charcoal and Water Color (7*a*)	2
Elementary Basketry	2	Applied Design (10)	2
Psychology (7)	3	Phychology (8)	2
Physical Education	1	Physical Education	1
Electives	4	Electives	4
	16		15

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Free-hand Perspective (1)	2	Costume Design (56)	2
History of Art (2)	3	Embroidery and Needlework (7)	2
Interior Decoration (25)	2	Art Metal	2
Advanced Basketry	2	Leather Tooling	2
Clay Modeling	2	Pottery	2
Teaching	3	Modern Education	3
Electives	2	Electives	2
	16		15

Required for Life Diploma in Drawing Supervision. Those who have not graduated from an accredited high school, or who are unable to show proficiency by credits from institutions of high learning, or grades by examination in the following branches, will be required to take the same in addition to the above: Physiology, 4 hours, History, 4 hours, Elementary Science, 4 hours, Agriculture, 4 hours, Rhetoric and Composition, 4 hours.

The electives allowed will permit a student in this course to prepare herself to teach other subjects in combination with drawings if she desires to do so.

MUSIC SUPERVISORS' COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Expression	3	History of Music (1 day)	2
Sight Singing (4 days)	2	Psychology	3
History of Music (1 day)	2	Voice	2
Voice	2	Piano	2
Piano	2	Harmony (2 days)	2
Physical Education (1)	1	Teaching 5, Lectures (1 day)	2
Teaching 5, Lectures (1 day)	2	Physical Education (2)	1
Harmony	2	Conducting	2
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Voice	2	Voice	2
Piano	2	Piano	2
Harmony	2	Counterpoint	2
Electives	1	Chorus and Orchestra Conducting	2
Orchestration	2	Modern Education	3
Chorus and Orchestra Conducting	2	Electives	1
Special Methods	2	Teaching	3
Management	2		
	15		15

PHYSICAL EDUCATION COURSES FOR MEN.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Biology (1)	3	General Chemistry (1)	5
English (1)	4	Public Speaking (2)	3
Physical Education (1)	1	Psychology (7)	3
Physical Education (7)	3	Physical Education (2)	1
Physical Education (6)	1	Physical Education (7)	3
*Electives	4	Physical Education (5)	2
	16		17

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Biology (11)	4	Biology (18) or (53)	1
Methods of Teaching (1)	2	Modern Education (2)	3
Physical Education (5)	1	Psychology (8) or (9)	2 or 3
Physical Education (3)	2	Physical Education (52)	1
Physical Education (8)	3	Physical Education (4)	2
*Electives	5	Physical Edcation (8)	3
		*Electives	5 or 4
	17		17

PHYSICAL EDUCATION COURSES FOR WOMEN.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Biology (1)	3	Biology (11) (Physiology)	4
English (1)	4	English (2)	4
American History (63) or (64)	2	Sociology (18)	3
Chemistry (1)	5	Psychology (7)	3
Physical Education (1)	1	Physical Education (2)	1
Public Speaking (2)	3	Physical Education (6)	1
		*Electives	1
	18		17

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Hygiene (56)	4	Teaching	3
Methods	2	Modern Education (2)	3
Physical Education (3)	2	Physical Education (8)	1
Physical Education (51)	1	Physical Education (4)	2
Child Psychology (8)	2	Physical Education (52)	1
*Electives	4	*Electives	4
Physical Education (7)	1	Physcial Education (6)	1
	16		15

ARTS AND CRAFTS.

BERTHA SPENCER, Associate Professor of Applied Arts.

Course 1. ART LEATHER. This craft presents unlimited possibilities and the work possesses the charm of variety that is given to original design. The processes of tooling, modeling and coloring will be taught in executing designs on useful articles. Two or four hours credit.

Course 2. ART METAL. This craft affords an opportunity for individual expression in copper and brass. In the making of trays, desk sets, bowls, etc., students will acquire a knowledge of the basic principles and processes. Two hours credit.

Course 3. JEWELRY. This course carries the student through the elementary steps of saw-piercing, etching, soldering and stone-setting. Open only to those who have had art metal. Two or four hours credit.

Course 4. ELEMENTARY BASKETRY. Making of simple pieces in reed and raffia, in which design is an important feature. Two hours credit.

Course 5. ADVANCED BASKETRY. Advanced problems in reed and raffia, and pine needle and Japanese matting baskets. Prerequisite, course 3. Two hours credit.

Course 6. BOOKBINDING. Includes simple problems in portfolio, notebooks, blank books, the binding of magazines and the mending and rebinding of books. Two or four hours credit.

Course 7. ELEMENTARY CLAY WORK. This course involves the making of tiles, bowls, vases, etc., by building piece upon piece, also modeling in mass. Two hours credit.

Course 8. ADVANCED POTTERY. In this course pieces are made by throwing or casting. Practical experience is given in glazing and firing. Open only to those who have had elementary pottery. Two or four hours credit.

Course 9. WOOD CARVING. Work in both soft and hard woods. Historic units and strap work are used in the carving of tie racks, hand mirrors, chair backs, etc. Original designs in relief, round and incised work. Two or four hours credit.

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* All electives must be approved by the heads of the departments involved.

Course 10. HANDWORK FOR INTERMEDIATE GRADES AND JUNIOR HIGH SCHOOL. This course is especially planned so that teachers will have some knowledge of the handwork needed in the fourth, fifth, sixth, seventh, and eighth grades, and how to correlate that work with Reading, Geography, History and Nature Study. Class problems in Card Board Construction, Elementary Bookbinding, Leather Tooling, Art Metal, Clay Modeling and Basketry.

BIOLOGICAL SCIENCES.

O. P. DELLINGER, Professor.
W. E. RINGLE, Associate Professor.
HARRY HALL, Associate Professor.
*J. R. WELLS, Assistant Professor.
ELIZABETH FLEESON, Assistant Professor.
ELIZABETH MOULTON, Assistant Professor.
FINES GREEN, Student Assistant.
ROBLEY MATHEWS, Student Assistant.
JOHN WEIDENMANN, Student Assistant.

There has developed within recent years a demand for better and more universal biological instruction. With the introduction of agriculture and domestic science into our schools, a knowledge of biology is demanded of a much larger number of individuals. For a long time biology was taught for its general cultural value or in its application to medicine; and to-day most of the courses in colleges and universities, and in some normal schools, are organized to meet the needs of the general student or the student of medicine. Teachers of biology have failed to realize that the mass of biological instruction from now on must be largely designed for students in agriculture, domestic science, education, and medicine, and the courses must be so constructed as to meet the special needs of these students.

It is the plan and purpose of the Department of Biology to offer instruction in biology as it applies to these fields; and many of the courses organized are especially for the student of domestic science, agriculture, or education. There are, however, a few courses of a general nature, but they are fundamental to any education.

LIFE CERTIFICATE COURSES.

Course 1. GENERAL BIOLOGY. This course is an introduction to the other biological sciences, and aims to acquaint the student with the elementary forms and forces of living nature. Here the student gets his first glimpses of the laws of evolution and heredity as they apply to human progress. Much attention is paid to the evolution of conduct of life. Types for study are selected as far as possible from the common animals. Three hours credit. Laboratory fee for material used.

Course 2. GENERAL BIOLOGY (continued). In this course the student studies the laws of growth and reproduction of living organisms as they are illustrated in plants. Here emphasis is given to the economic phases of botany. Plants are studied in their relation to medicine, textiles, lumber, ornamentation and food production. Attention is given to propagation and distribution. Three hours credit. Laboratory fee for material used.

Course 11. HUMAN PHYSIOLOGY. The purpose of this course is to teach those things that will enable the student to make of his or her body, and also the bodies of those they minister to, the most efficient mechanism possible. The requirements of the body as to food, exercise, sleep, fresh air, bathing, etc. The physical requirements of children, where they differ from the adult, will be emphasized. The physiology of reproduction will receive the attention it deserves. Daily for twenty weeks. Four hours credit. Laboratory fee for material used.

Course 12. PHYSIOLOGY AND HYGIENE. This is a course designed especially for grade and rural-school teachers, covering the principles of physiology and hygiene. Special emphasis is laid on ventilation, foods, play, eye and ear hygiene, and those phases of the subject which are of interest to every grade-school teacher. Three hours credit. Fall and summer terms.

Course 14. APPLIED BIOLOGY I—NATURE STUDY. This course is designed especially for primary and grade teachers. It attempts to answer the question, What knowledge of living forms is adapted to children between the ages of six and fifteen? A review of the literature in this field is also given. Four hours credit.

Course 15. APPLIED BIOLOGY II—ELEMENTARY AGRICULTURE. The principles of vegetable gardening, fruit growing, landscape gardening, forestry, and the elements of animal husbandry form the basis of this course. Two hours credit.

Course 16. GENERAL BACTERIOLOGY. This course is required of all students who major in domestic science or agriculture, and is open to any student in the college course. It is a general introductory course consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit. Fall, spring and summer terms. Laboratory fee for materials used.

Course 17. HYGIENE AND PUBLIC HEALTH. A course in elementary bacteriology designed especially for grade and rural teachers. The course is a general survey of the field of bacteriology as it relates to civic and school sanitation, agriculture and the preservation of foods. The student becomes familiar with immunology and the physiological factors involved in the natural resistance to disease. Three hours credit. Fall and summer terms.

Course 18. VOCATIONAL HYGIENE AND SANITATION. A course designed especially for the students in industrial arts. The principles of hygiene and sanitation as related to the industries and the men in industrial work form the basis of this course. One hour credit. Spring and summer terms.

Course 19. ENTOMOLOGY. A course in the classification and collection of life histories of the common insects, also a study in the methods of control of the common injurious insects in the orchard, garden and field crops. Two hours credit. Summer terms.

AGRICULTURE.

The work of this subject is conducted by means of textbook study, reference work, lectures, demonstrations, observation of field work, laboratory experiments, practical work in the school gardens and at the experiment stations. The experiment stations consist of about thirty-five acres devoted to various experiments and tests that have special value to the teachers and farmers in this section of the country. Through the affiliation of other departments, practical courses in farm blacksmithing, farm carpentry, gas engines and farm mechanics have been worked out to meet the needs of those specializing in agriculture. The following courses are offered:

Course 1. RURAL-SCHOOL AGRICULTURE. This course is designed to meet the needs of those who are preparing to teach in the grades and rural schools. Practical experiments and demonstrations will be outlined for each grade. First semester; one hour lecture, four hours laboratory and field. Two hours credit.

Course 2. GENERAL AGRICULTURE. A course in which a general survey of the whole field of agriculture is taken. This course is planned especially for students who wish a general introduction to this great industry. While Biology 1, 2 or 12 is desirable as a prerequisite, it is not necessary. Three hours credit.

Course 3. VEGETABLE GARDENING. Principles and practices used in growing vegetables. Special attention is given to the home garden. The scoring, marketing, and canning of vegetables is given special emphasis. The work has been arranged to meet the needs of those specializing in Domestic Science and Agriculture. Second semester; two hours lecture, two hours laboratory and field. Two hours credit.

Course 4. AGRONOMY. Lectures and recitations on the history, production, cultivation, harvesting and marketing of farm crops. The laboratory and field work will consist of a study of all crops adapted to this region and judging of different cereals. First semester; two hours lecture, four hours laboratory. Five hours credit.

Course 5. SOILS AND FERTILIZERS. Soils are studied as to origin, kind and fertility. Much attention is given to the question of how to keep soils productive and how to keep soils to a high state of production. Twenty weeks. Five hours credit. Laboratory fee for material used.

Course 6. ANIMAL HUSBANDRY. This course includes what is usually given in more extensive courses, much attention being given the subjects of breeds and types of farm animals, stock judging, feeds and feeding, and care and diseases of animals. In it the student becomes acquainted with the things necessary to intelligent management of stock on the farm. Two hours lecture, four hours laboratory. Three hours credit.

Course 7. FARM MANAGEMENT. Selection of farms; various systems of farming; investment of capital; scoring of farms in the community; farm layout; labor; details, marketing, farm accounting. Five hours credit.

Course 9. AGRICULTURE CLUB. The Agriculture Club meets regularly on Wednesday, at the noon hour. Here the best articles from the leading agricultural magazines and periodicals are reviewed and discussed. A light luncheon is served, and this work is of special value to those preparing to teach agriculture. Open to all agriculture students.

CHEMICAL AND PHYSICAL SCIENCES.

(See section II, page 57.)

COMMERCE.

(See section IX, page 237.)

DRAWING AND DESIGN.

Elsie Leitch Bowman,
Associate Professor Drawing and Applied Arts.

The department aims to prepare teachers to meet the demands of the public schools for instruction in all branches of drawing, and to prepare supervisors and departmental teachers of art. Classes are arranged in free-hand drawing and design for students in the industrial department. Special arrangements are also made for those who do not expect to teach, but who are interested in the work.

Course 1. Free-hand Perspective. Instruction is given in the principles of perspective and of light and shade. The students sketch objects, interiors, exteriors and street scenes. A study of pencil sketching is made both in outline and in tone. Two hours credit.

Course 2. History of Art. The course consists of a study of the world's masterpieces with reference to recognized principles of art as applied to architecture, sculpture, and painting. Also it touches upon historic furniture, textiles and costumes, with a study of some f the principles of good line, form and color. Three hours credit.

Course 3. Primary Drawing and Handwork. This course is for those who expect to teach or supervise drawing in the kindergarten and first four grades of the public schools. It includes drawing, painting, blackboard work, elementary design and construction problems suitable for children in the primary grades, with methods and a complete outline of study. Some picture study is also given. Laboratory period is required. Four hours credit.

Course 8. Intermediate Drawing. This covers the work for those who expect to teach or supervise above the fourth grade. It includes a short course in perspective, color, design and nonequipment construction work. Exercises in rapid blackboard sketching are given, picture study is continued and a course of study is planned. A laboratory period is required. Four hours credit.

Course 10. Applied Design. This is a study of the fundamental principles of design in line, mass and color. The problems developed may be applied to the arts and crafts classes. Two hours credit.

Course 7*a*. Charcoal and Water Color. Study of form, values, color harmonies and composition by means of still life and pose drawing. Special attention is given to rapid sketching for action and proportion, and to development of pictorial art. Two hours credit.

Course 7*b*. Advanced Charcoal and Water Color. A continuation of course 7*a*, special emphasis being given to life drawing and painting. Studies suitable for illustration or for mural decoration may be made. Two hours credit.

Course 11. Poster and Advertising. A study of the principles of design as applied to poster making and commercial advertising. One hour credit.

Course 12. Free-hand Drawing and Design. The first part of this course is designed to develop ability to "see" an object and to give adequate, accurate and rapid expression by means of pencil and blackboard sketches. The second part of the course is a study of the principles underlying good design-line and space composition, rhythm and proportion. Throughout this course, the problems used will be those especially adapted to the needs of industrial arts teachers. Prerequisite, Mechanical Drawing 1. Two hours credit.

GEOGRAPHY.

EULALIA ROSEBERRY, Professor of Geography.
BESSIE ASHTON, Assistant Professor of Geography.

The department is well fitted with maps, globes and charts for lecture work. The laboratory has a complete equipment of apparatus for physiography, topography, meteorology and mathematical geography. A standard topographic alidade and a number of slope boards have recently been acquired for use in contour work, road and area sketching and map making.

Course 1.—PHYSIOGRAPHY. Designed for college students who desire scientific knowledge of the earth, its relations, physical features, and their origin and development. The work is supplemented by laboratory and field work. Economic controls are given special attention. Courses required in grade teachers' course. Offered each semester. Never in the history of the world has a knowledge of these factors been so desirable as at the present time. Five hours credit.

Course 1*b*.—PHYSIOGRAPHY. The course is designed for college students who have had one year's work in high-school physical geography. The course embraces the scope of work in course 1, in review. Three hours credit.

COURSE 2.—INDUSTRIAL GEOGRAPHY. This course includes first a brief study of the geographic basic controls of climate, soil and topography. The course encompasses the origin, history and development of agriculture, textiles, food products, minerals and manufacture of machinery as controlled by geographical factors. This course is especially valuable for the grade teacher, and is particularly designed to correlate with the industrial courses. Three hours credit.

Course 3.—GEOGRAPHY OF AMERICAN HISTORY. This course is designed especially to correlate with American history courses, and consists of a study of geographic conditions which have influenced the course of American history and of their importance as compared with one another, and with nongeographic factors. Special attention will be given geographic factors influencing the recent war. Three hours credit.

Course 4.—PRIMARY GRADE WORK. The teacher in the primary grades must, in order to give the most efficient service, have a knowledge of geographic control far beyond that which is necessary to give the pupil. This course is designed especially to give necessary knowledge to the teachers of nature study and of primary grades, and for those doing departmental work in geography. The work consists largely of the selection and adaptation of material best suited to first four grades and to the method of presentation. Three hours credit.

Course 5.—GRAMMAR GRADE WORK. This course encompasses, first, a study of basic geographic controls, and second, subject matter and methods for the grades above the fourth, and is designed for grade and rural teachers and those doing departmental work in geography. The problem method in geography is given special attention. Two hours credit.

Course 6.—COMMERCIAL GEOGRAPHY. This course is organized to give the student a scientific knowledge of the three distinctive sets of controls—the natural, the human, and the economic. It correlates not only with the other commercial courses, but with the industrial subjects as well. Three hours credit.

Course 7.—GEOGRAPHY REVIEW. This course is for students who desire a thorough review of general geography and for those who teach in the grades, and those who are preparing to do departmental work in geography. Two hours credit.

Course 8.—Industrial Geography of Kansas. This course is offered to give the students an opportunity to study the industrial development of our own state as controlled by geographic influences. Two hours credit.

Course 9.—Mathematical Geography. This course is offered in order to give the student an opportunity to make a definite study of the size, form, movement and measurements of the earth, together with its relation to the sun and moon. Two hours credit.

Course 10.—Topography. This course is designed to give the student an opportunity to study designated areas in detail. Students are given an opportunity to learn use of slope board and topographic alidade, and are given practice in interpreting and making topographic maps. The course is entirely laboratory, conference and field work, and gives one, two, or three hours credit. Amount of credit depending on amount and quality of work done by student.

Course 11.—The Geography of North America. Every teacher should have an accurate and extensive knowledge of the geography of North America. This course will consist not only of an intensive study of the geographic controls of the continent as a whole but also of an intensive study of Canada, United States and Mexico, the geographic factors that have influenced their development, their present commercial and industrial status and their future possibilities. This course will furnish a scientific basis for the study of other continents and also illustrate the best methods of teaching these units to grade pupils.

Course 52.—Geography of Europe. Every teacher should have a knowledge of the elements underlying the relationships existing between ourselves and the nations of Europe. Our increased interest in the European nations demands that not only the teacher must have this knowledge but should be able to teach it to the future voters, and statesmen of our nation. This course has been organized for the purpose of putting the teachers in touch with subject matter in such a manner that they may become as familiar with the situations in the countries of Europe as with those of the United States. Our new responsibilities demand that our teachers must give more attention to this problem than they have in the past. Three hours credit.

Course 53.—Current Geography. One, two or three hours. Study of current geography in relation to boundary lines, trade relations and industrial conditions. One hour credit only may be made in one semester. A maximum of three hours credit only may be made in the course.

Course 54.—Meteorology. This course deals with atmospheric conditions as related to weather, climate and life. Three hours credit.

Course 55.—Climatology. This course considers, in addition to climatic causes and effects in general, the climatic regions of the United States and the continents and their relation to physiographic features, climate as a modifying factor of crops, animal life and people of the country. Three hours credit.

EDUCATION.

(See section, II page 85.)

ENGLISH.

(See section II, page 70.)

GEOGRAPHY.

(See section III, page 98.)

HISTORY AND SOCIAL SCIENCES.

(See section II, page 71.)

HOME ECONOMICS.

(See section V, page 135.)

INDUSTRIAL ARTS.

(See section IV, page 113.)

METHODOLOGY.

Hattie Moore-Mitchell, Professor.
Bertha E. Drown, Assistant Professor.
Olive Wohlford, Student Assistant.
Lora Ward, Student Assistant.

Foreword. The day is past when the only requisite sought by a board of education is that the candidate has good grades in academic lines. Such a grade reveals the ability as a student but not necessarily as instructor.

The aim of the Methodology Department is to make clearer the teacher's privilege and the teacher's preparation from the standpoint of art in instruction.

Courses. Seven courses are offered for 1921-1922. College credits. Prerequisites: One semester's work in phychology is recommended before taking the course in General Methods. Students enrolling in Normal Training Methods must have at least junior standing in the college course.

Notebooks. Notebooks are indexed and catalogued in such a way that additional material may be subsequently incorporated. Mimeographed copies of poems, drills, board designs, programs and bibliography are filed in an indexed clipping book which permits future contributions after the course is completed.

Educational Journals. The department carries several subscriptions for each of the different current educational publications, and articles relevant to the regular work or season are reviewed by class. A "speaking acquaintance" with these various journals is cultivated throughout the year. One quiz in each course is concerned entirely with reference to work from these journals.

Entrance Examinations. Teachers holding first-grade certificates and having had five years' successful experience, may make application for entrance examination. Two hours credit in grade methods. All such application must be made within the first ten days from opening of session. This test, being based on experience, rather than formal text, is not identical with the regular class work, and a teacher being granted this entrance credit by examination may, with profit, enroll in regular class work for remaining two hours' credit offered in the grade teachers' course.

Extension and Correspondence Work. The better part of a class recitation in methods depends upon the personal element. The actual material introduced as illustration, the demonstration (before the class), followed by comment and criticism, the standardization of one's effort by comparison and contrast with work of others is impossible by correspondence, hence no method courses (except the two hours credit mentioned in foregoing paragraph) are offered except in residence work.

PRIMARY METHODS.

Primary Training League. This organization is instrumental in holding the fellowship among primary teachers after they leave college. The membership roll constitutes a mailing list and directory.

Thesis. Each student completing special course for primary teachers presents a thesis as part of last semester's work. In order that some estimate may be gained concerning range of subject and material for such theses, the following list of subjects is cited from manuscripts added to this department by students completing the course.

SUGGESTIVE SUBJECTS FOR FINAL THESES IN PRIMARY COURSE.

Special day program.
Recreation plans.
The last day of school.
Washington's birthday.
Arbor Day program.
Through the gates of story land.
Christmas in foreign lands.
Musical devices.
When company comes.
What I wish the teacher before me had done.
Glimpses into other teachers' schools.
Half hours with the boys and girls.
Parents' meeting.
Language in the third grade.
Psychology of an invitation.
The day of the program.
What to do the first day.
The primary teacher's trunk.
Decoration Day.
Difficulties in teaching spelling.
The primary teacher's notebook.
The primary had a picnic.
Closing-day program.
What a primary teacher ought not to see.
Parents, school and teacher.
First four months of school.
Why school children are so parrot-like.
How my school keeps Hallowe'en.
Something I must avoid in teaching.
Lincoln Day program.
My first day's experience as a teacher.
The ideal primary room.
Primary teacher's review and resolve.
Things in my childhood that have helped me understand my pupils.
The teacher's play-hour duty.
Lest we forget we once were primary people.
Beautifying the school grounds.
Essentials in playing a game.
Things I am going to do when I teach school.

Course 1. **Primary Methods.** First semester. While this course is essentially intended for candidates for special primary teaching, yet rural teachers will find the work profitable. A regular organization, known as the Primary Teachers' League, is maintained by students preparing for primary work. The course is enriched by library readings and special lectures. Each member of the class presents for approval a definite amount of work, charts and devices, in addition to notebooks, as credentials for grades. Primary reading; history and devolopment of recognized methods; advantages and disadvantages claimed for each. Two hours credit.

Course 2. PRIMARY METHODS. Second semester. Continuation of course 1. Students may enter who have not completed first semester course. Subjects considered: Language work, specimens of work from distant schools, health lessons, rhetoricals, occupation work, "fads and theories." The league sessions during this semester will be addressed by outside educators. Preparatory to receiving credit from this course, applicant prepares discussion or demonstration of some phase of professional primary teaching. Manuscript of this discussion becomes the property of the department. (See Foreword: "Thesis for Primary Methods.") As in course 53, each member of the class prepares a certain number of models, charts and devices ready to be put into actual service. Through the kindness of faculty members in departments of music and physical education, valuable assistance will be given in preparation for primary music and recreation drills. (See Foreword: "Educational Journals.") Two hours credit.

Course 3. GRADE TEACHERS' COURSE.

CHARTS, POSTERS, WALL DECORATION. The gathering of suitable materials for charts when away from home is a task which does not bring proportional returns. The virtue of such work often lies in the correlation with other studies and the coöperation of home and school in securing material. On account of these two facts, the number of charts required from each student is reduced to the minimum and suggestive types are considered by use of blue-print copies of charts and posters which have been used in the schoolroom under normal conditions throughout the year. Each student compiles a portfolio of these blue prints for future suggestiveness.

NOTEBOOKS. A well-arranged notebook in methods is frequently of more service to a teacher than the text. Notebooks are indexed and catalogued in such a way that additional material may be subsequently incorporated. Mimeographed copies of poems, drills, board designs, programs and bibliography are filed in an indexed clipping book, which permits future contributions after the course is completed.

GRADE TEACHERS' COURSE. First semester, freshman year. Besides the text, discussions and investigations into course of study for elementary grades form a part of this course. Demonstrations of teaching difficult portions given in arithmetic, history, and geography. Throughout the year special lectures are given, entitled "The hand as well as the head." From suggestions from these lectures each student prepares a certain number of articles suitable for hand work in the grades. Preceding the holiday vacation a "school bazaar" is held as class recitation, at which time these models are on exhibition, a placard accompanying each, giving amount and cost of material, time used in making, and grade for which suitable. This course is desirable work for rural teachers. Two hours credit.

Course 4. GRADE TEACHERS' COURSE. Second semester. A continuation of course 3. Methods of presentation of physiology, grammar, orthography and reading by means of a review from teacher's viewpoint. Special lectures this semester relative to special days, decorations, recreations and experiments. From library assignments a methods annual is compiled, enabling the student completing this course to become a forceful factor in professional efficiency beyond the daily routine of simple textbook teaching. (See Foreword: "Equipment," also "Educational Journals.") Two hours credit.

SUBSTITUTE RECITATION. Students in general methods and normal training methods have privilege of attending, during the semester, three recitations in other classes giving professional credit. A written report of such visit is made by student in lieu of note from methods recitation from which he is excused. This excuse is granted before each absence, and no substitute recitation credit is granted without such excuse.

Course I. METHODS FOR SENIORS IN HIGH SCHOOL. The high-school course provides for a half unit in methods and management and in meeting this requirement in the professional course a class in methods is maintained the last semester for those who are planning to teach directly following their graduation from high school.

This course includes methods in the various studies taught in the elementary schools. Special consideration is given to difficult portions found in the state texts in the common branches. One-half unit credit.

Course 51. GENERAL METHODS. Text: Thorndike's Principles of Teaching. One year's work in Psychology is recommended as prerequisite, although mature students with experience in teaching, or high-school graduates from Normal Training Course may carry the work.

This course presents teaching as a scientific profession as well as a practical service in imparting information. The application of principles to the current educational problems is a dominant feature of the course. Reviews in typewritten form enable the student in his study of the text in noting points needing library reference or report from personal observation. Course is offered each semester. Students in this course are allowed three "substitute recitations." See Foreword (substitute recitation). Two hours credit. This course is accepted as Education requirement in Senior College.

Course 52. NORMAL TRAINING METHODS. First semester and summer session. Open to students having at least junior standing. The introduction of normal-training courses into fifty of the accredited high schools of Kansas brings with it a demand for teachers who can take charge of normal training courses. Few schools have an enrollment warranting the services of a special normal training teacher. As a result, the work must be given by one whose special preparation has been in other lines. The demand for this preparation is met in this course for normal training teachers. The bibliography includes the normal training course texts which are used in the various high schools of the state, together with outlines of work, also reviews covering normal training literature edited by the state department. A series of lectures giving definite suggestions as to plans and policy in meeting the state course of study and examination tests for the candidate for normal-training certificate is a valuable feature of this course. Students taking this course will find any standard work on teaching a desirable reference text. Three sub-sititute recitations are allowed during semester. (See Foreword: "Substitute Recitation," also "Equipment.") Two hours credit. This course is accepted as Education requirement in Senior College.

LANGUAGE.

(See sectionII, page 74.)

MATHEMATICS.

(See section II, page 79.)

MUSIC.

(See section X, page 243.)

PHYSICAL EDUCATION.

G. W. Weede, Director for Men.
May G. Long, Director for Women.
Paul J. Alyea, Student Assistant Director for Men.
Regina Frank, Assistant Director for Women.

Design of Work. The department exercises supervision over the gymnastic, athletic and play activities in this institution, and offers courses in the theory and practice of physical education. The department aims to minister to the physical needs of all students through hygienic, educative and recreative activities, and thus to aid them in the formation of hygienic habits that during their college course they may make profitable preparation for life. Certain special courses are designed to train students in the theory and methods of physical education. A life diploma is given at the completion of the regular two-year Physical Education course.

Physical education is required of all freshmen unless excused for disability by the college physician. After completing the freshmen requirement, advanced work for a total of four hours of credit must be taken before graduation.

In addition to the gymnasium classes in physical training all young men are encouraged to develop their physical skill by playing on practice teams in various athletic lines. The most proficient of these have opportunity to enter the first team and participate in intercollegiate contests. The college authorities encourage all reasonable and sane athletic development as a means of the training of physical qualities desirable in men everywhere.

The women students have equal opportunity for general physical development. Soccer, tennis, hockey and basket-ball teams are organized and intramural games played. No intercollegiate contests for women are scheduled.

PHYSICAL EDUCATION FOR MEN.

Indoor Facilities. The department has a temporary gymnasium arranged in the former S. A. T. C. barracks which gives floor space 40 feet by 90 feet. It is equipped for the general gymnastic and floor work carried on by the regular classes. Here the intercollegiate and intramural basket-ball schedules are played. An inclined seating arrangement at one side of the floor accommodates 500 people. Connected with this floor by a corridor is a large locker room with ample bathing facilities.

Credits. Members of the practice and intercollegiate teams reporting regularly are excused from regular physical educational classes and are entitled to full credit in that portion of their work. The individual grade rests largely on the basis of attendance, punctuality, earnestness and application.

INSTRUCTION IN PHYSICAL EXERCISE.

Course 1. Freshman Year. First semester. Three hours a week. One hour credit. This course is of a body-building nature. During the fall when the weather permits this course is carried on outdoors and consists for the most part of a study and practical application of outdoor games. Beginning about December first the work consists of the following:

(*a*) Free Calisthenics. Exercises are selected for their different effects upon the bodily organism, and are arranged with the idea of progression. They involve hygienic or body-building work, educative movements and corrective or remedial exercises.

(*b*) LIGHT APPARATUS. Training is given in the use of Indian clubs, dumb-bells, wands, etc.

(*c*) HEAVY APPARATUS. Graded exercises are given on parallel bars, vaulting bars, horses, horizontal bars, traveling and flying rings, etc.

(*d*) INDOOR ATHLETICS AND GAMES. In this will be outlined indoor track meets, basket-ball, indoor baseball, volley ball, boxing, wrestling, and allied work.

Course 2. FRESHMAN YEAR. Second semester. Three hours a week. One hour credit. This course is a continuation of course 1. Baseball, tennis and tract and field athletics are given as soon as weather conditions permit outdoor work.

Courses 51 and 52. PREREQUISITE, COURSES 1 AND 2 OR EQUIVALENT. Two hours a week. One hour credit. Different work each term throughout the year, based on the outlines of courses 1 and 2, but more advanced. Students in these courses are used as normal teachers with the model school children, thus deriving experience useful in teaching. Games and exercises suitable for graded schoolroom use are also emphasized.

Course 3. THEORY OF PHYSICAL EDUCATION. First semester. Elective course. Open only to those majoring in Physical Education. Two periods weekly. Two hours credit. This is a course in the essential factors of physical education. The following topics are studied: The physiology of exercise, the systems of physical education, the practice of physical education on playgrounds, in schools and colleges. Physical examinations, efficiency tests and correction of bad posture and abnormal conditions.

Course 4. PLAY AND PLAYGROUND METHODS Second semester and summer term. Elective course. Two periods weekly. One hour credit. An extra hour credit given for participation in twilight leagues. Play equipment and management will be considered. Drawings, estimates and specifications for such play apparatus as can be made by high-school manual-training departments form a part of the work. A graded course of games, especially long base, playground ball, soccer, captain ball, volley ball, basket ball, will be thoroughly taught. The athletic badge competition, group athletics, and grade-school track meets form part of the instruction. A course for teachers who expect to do playground work in the graded school, or supervisory work in the public schools.

Course 5. SCOUTING. Elective course. Second semester and summer term. Three periods weekly. Two hours credit. In conjunction with the Boy Scouts of America and the Pittsburg local council a course designed to give prospective teachers the fundamental principle of scouting will be given. It is a course designed to train scout leaders.

Course 6. TRAINING AND FIRST AID. Elective course. No credit except for students in physical-education course. Emergency treatment of common injuries. Theories of training, massage and treatment of sprains, bruises, etc.

Course 7. COACHING METHODS. First and second semesters and summer session. Elective course. Three hours weekly. Three hours credit. This course is designed to meet the needs of men who will be required to coach football, basket ball, and track and field athletics in high schools and colleges. It deals with the essential fundamentals in each sport and systems of play and rules.

Course 8. CONTINUATION OF COURSE 7 FOR ADVANCED STUDENTS. Elective course. Three hours weekly. Three hours credit.

Physical training for the Senior high school consists of indoor and outdoor gymnastics and games.

Physical training for the Junior high school consists of gymnastic lessons, rhythmic exercises, plays and games.

The Senior High School has a coach for football, basket-ball and track athletics supplied by the course for teachers from the coaching methods class and the coach will usually be a 'varsity man in that branch of sport.

Regular schedules in the above branches of athletics are arranged with the high schools in the Mineral Belt Athletic Association, of which Normal High is a member, and with high schools in the Kansas Third district.

PHYSICAL EDUCATION FOR WOMEN.

Each girl is given a physical examination upon entrance. No student will be excused from required work except by orders of the college physician and physical director for women. Students found to be unable to carry the regular gymnasium courses will be assigned to other courses. Special effort is made to establish a good posture and correct all minor defects.

INDOOR FACILITIES. The department has a gymnasium in the main building of Russ Hall 50 feet by 50 feet. It is well equipped for the general gymnastic and floor work carried on by the regular classes. The basket-ball floor, situated in the barracks, is 92 feet by 40 feet. Here the interclass basket-ball schedules are played. Two locker rooms, supplied with steel lockers, are available for the students. Outdoor activities are conducted on the athletic field, tennis courts, and the regular playground. The department is supplied with the necessary equipment to make physical examinations, to give theory instruction, and render first aid. The library is supplied with books on physical training, athletics, both theory and practice, as well as related subjects.

CREDITS. For the first six weeks of fall and the last six weeks of spring class work, credit is allowed for participation in from the following activities: fall, soccer and hockey; spring, tennis, baseball and field sports.

DESCRIPTION OF COURSES.

Course 1. ELEMENTARY PHYSICAL EDUCATION. Hygienic, recreational activities, including formal gymnastics, marching, elementary folk dancing, fancy steps, posture drills and games. Three hours weekly. One hour credit.

Course 2. A continuation of course 1 only more advanced, also includes work with wands, dumb-bells, Indian clubs, etc. Three hours weekly. One hour credit.

Course 6. SCHOOL-ROOM GYMNASTICS. This course is designed for the primary, intermediate and rural teachers and aims to fit her to carry on the work in her own school-room. It includes outlines for general exercises in all grades. Lesson plans for each grade by months. Drill in giving commands, special posture drill, school-room marching, fancy steps, folk dances suitable for school-room use. Prerequisite, courses 1 and 2. Two hours weekly. One hour credit.

Course 4. PLAYS AND GAMES. Elective. Second semester and summer term. Graded material for elementary schools and playground including organized games, singing games and folk dances. Two hours weekly. One hour credit. During the summer session a two-hour credit is given to those who take this course and participate in the twilight league.

Course 51-52. MARCH TACTICS Elective. Includes figure marching, fancy drills and a simplified form of military drill. The course aims to qualify one to arrange drills suitable for any occasion. Prerequisite, Physical Education I and II. Three hours weekly. One hour credit.

Course 7. FOLK DANCING. Elective. This course includes dances of the different nations with suggestions about costumes, etc. Prerequisite, course Physical Education I and II. Two hours weekly. One hour credit.

Course 8. ESTHETIC DANCING. Elective. Prerequisite, course 7. Two hours weekly. One hour credit.

Course 3. THEORY OF PHYSICAL EDUCATION. Elective. First semester. Open only to those who are majoring in Physical Education. Aims and methods; history; physical examinations. Prerequisite, course 1 or 2 and 4. Two hours weekly. Two hours credit.

GIRLS' GYMNASIUM COSTUME. The gymnasium bloomers are of black serge (light weight), made full plaited at the belt with plaits sewed down five or six inches, elastic at the knee. They may be made at home or bought at the dry-goods stores at Pittsburg. The middies are of white wash goods made regular navy style, with large collars, sleeves that may be rolled up, and with no color upon them anywhere. Black middy ties, black stockings and rubber soled shoes are used. A one-piece gymnasium suit is being considered. Please consult the director of physical education for women before purchasing a suit.

PUBLIC SPEAKING.

JOHN R. PELSMA, Professor.

This department aims to make each student an intelligent reader and an effective speaker. It aids him to systematize, to correlate, and to express his knowledge gained through study and experience; it encourages concentration, stimulates logical thinking, and gives opportunity for self-expression. It teaches control of thought and action, which is the acme of all education.

Public-speaking students are required to attend and to report upon certain public-speaking contests and other public addresses given during the semester, and are urged to join a literary society and to participate in some of the contests provided by the Oratorical Association.

The department has charge of the Amateur Dramatic Club. Its membership is open to students with histrionic ability. The club stages two plays each year.

Course 1. ESSENTIALS. Each semester. This is an elementary course in oral reading and public speaking; and a prerequisite to all other courses in this department except courses 3 and 51. The fundamental principles of expression are emphasized through drills in correct breathing, breath control, tone production, voice modulations, and in the composition and the delivery of original speeches. A basis of self-criticism is effected, enabling the student to continue improving his speech after completing the course. The work will be adapted to the present and future needs of each student. Three hours credit.

Course 2. ORAL READING. An elementary course in reading. This course aims at an oral reproduction of the thoughts and emotions of others as preserved in classic and current literature. Three hours credit.

Course 3. ARGUMENTATION. A study of the principles of argumentation—analysis, evidence, argument, proof, refutation and fallacies. Brief-drawing. Practical debating. Platform technique. Critical study of masterpieces of forensic oratory. Parliamentary drill. Two hours credit.

Course 4. PUBLIC SPEAKING. A beginning course in platform delivery. Emphasis will be placed on delivery. Historic masterpieces of forensic and oratorical art will be used. Some original speeches will be given. Two hours credit.

Course 5. DRAMATIC ART. Essential for students interested in amateur theatricals, and for teachers who coach plays. Stage technique. Dramatic interpretation. Pageantry. Pantomime. Costuming. Making-up. Scenery. Choosing, directing and rehearsing plays. Several one-act plays will be staged. Three hours credit.

Course 7. INTERPRETATION. An advanced course in reading. Classical selections will be studied with a view to their vocal interpretation. Humorous, pathetic and dramatic productions will be read. Character studies. Dialect readings. Physical expression. Three hours credit.

Course 9. EXTEMPORE SPEAKING. This course aims to cultivate in the student a fluent, forceful and effective presentation of his own thoughts to others. Daily practice will be given on assigned subjects previously mastered and outlined, though the diction of the speech is not memorized. Every student should learn to think while on his feet. This course offers an opportunity to become an effective platform speaker through a careful preparation and delivery of various forms of public address adapted to definite audiences. Two hours credit.

Course 11. STORY TELLING. The best literary narratives will be arranged for the platform. Heroic tales, Bible stories, myths, fables, fairy tales, folk stories, animal stories, and original stories will be used as illustrative material for original speeches or for the purpose of entertainment. Stories will be modified to suit the audience. Two hours credit.

Course 51. ADVANCED PUBLIC SPEAKING. A course in reading and speaking for advanced students who have had some experience in public speaking and who desire a survey of the principles with constructive criticism. Oral interpretation of literary masterpieces and construction and delivery of original extempore speeches. Vocal defects—diagnosis and treatment. Criteria for judging contests, training contestants, etc. Three hours credit.

Course 52. PLATFORM READINGS. Prerequisite, courses 1, 2 and 3. An advanced course in literary interpretation. Selection and arrangement of repertories for parlor, chautauqua and lyceum platform. Three hours credit.

Course 54. ORATORY. Prerequisite, courses 1 and 4. A study of the oration, the orator and the audience. Analytical study of classical orations. Practice in the composition and the delivery of orations, formal speeches and occasional addresses. A study of the crowd in its relation to the public speaker. Lessons in the history of oratory. Two hours credit.

Course 56. SEMINAR. Intended primarily for intercollegiate debaters and orators, and for those students who wish to do some original research in speech education. Credit and schedule to be arranged in consultation with the instructor. One to three hours credit.

SUMMER SESSION.

"There is no education without expression." This department welcomes any student who desires a sane, scientific and practical knowledge of the art of oral reading and platform speaking. No particular "school" is followed. The method is eclectic.

There is an increasing demand for teachers who possess a knowledge of public speaking in addition to a knowledge of other high-school subjects. Especially is this true of the subject of English.

Any of the courses listed will be sectioned if the enrollment exceeds twenty. Courses not outlined will be offered if there is sufficient demand.

Course 1. ESSENTIALS. This is an elementary course in oral reading and public speaking. All the fundamental principles of expression are emphasized through drills in correct breathing, breath control, tone production, voice modulations, and in the composition and delivery of original speeches. A basis of self-criticism is effected, enabling the student to continue improving his speech after completing the course. The work will be adapted to the present and future needs of each student. Three hours credit.

Course 3. ARGUMENTATION. A study of the principles of argumentation—analysis, evidence, argument, proof, refutation and fallacies. Brief-drawing. Practical debating. Platform technique. Critical study of masterpieces of forensic oratory. Parliamentary drill. Two hours credit.

Course 5. DRAMATIC ART. Essential for students interested in amateur theatricals, and for teachers who coach plays. Stage technique, dramatic interpretation, pageantry, pantomime, costuming, making-up, scenery, choosing, directing and rehearsing plays. Brief history of the stage. Several one-act plays will be staged. Three hours credit.

Course 7. INTERPRETATION. An advanced course in reading. Classical and modern selections will be studied with a view to their vocal interpretation. Humorous, pathetic, dramatic and dialectic productions will be read. Character studies. Physical expression. Three hours credit.

Course 51. ADVANCED PUBLIC SPEAKING. A course in reading and speaking for advanced students who have had some experience in public speaking and who desire a survey of principles with constructive criticism. Oral interpretation of literary masterpieces and the delivery of original extempore speeches. Vocal defects—diagnosis and treatment. Criteria for judging contests, training contestants, etc. Three hours credit.

EXTENSION.

Classes in what is commonly called "Expression" and classes in practical public speaking will be organized if a sufficient number of students desire them. The following courses are suggestive:

Course 1. ESSENTIALS OF EXPRESSION. This is an elementary course in oral reading and public speaking. All the fundamental principles of expression are emphasized through drills in correct breathing, breath control, tone production, voice modulations, and in the composition and delivery of original speeches. A basis of self-criticism is effected, enabling the student to continue improving his speech after completing the course. The work will be adapted to the present and future needs of each student. Three hours credit.

Course 3. ARGUMENTATION. A study of the principles of argumentation—analysis, evidence, argument, proof, refutation, and fallacies; brief-drawing; practical debating; platform technique; critical study of masterpieces of forensic oratory; parliamentary drill. Two hours credit.

Course 5. DRAMATIC ART. Essential for students interested in amateur theatricals, and for those who coach plays. Stage technique, dramatic interpretation, pageantry, pantomime, costuming, making-up, scenery, choosing, directing and rehearsing plays. Brief history of the stage. Several one-act plays will be staged. Three hours credit.

Course 9. EXTEMPORE SPEAKING. This course aims to cultivate in the student a fluent, forceful and effective presentation of his own thoughts to others. Daily practice will be given on assigned subjects previously mastered and outlined, though the diction of the speech is not memorized. Every one should learn to think while on his feet. This course offers an opportunity to become an effective platform speaker through a careful preparation and delivery of various forms of public address adapted to definite audiences. Two hours credit.

RURAL EDUCATION.

EDGAR MENDENHALL, Professor of Rural Education.
———, Rural Credit Teacher.

Course 3. RURAL SCHOOL MANAGEMENT. This course is primarily for beginning teachers and teachers of limited experience and training. The organization of the rural school; the making of the program; problems of school discipline; school-room decoration; equipment and teaching problems of the rural school will receive attention. Three hours credit.

Course 15. THE SCHOOL AND THE COMMUNITY. Methods and plans for making community surveys; the school as a social and recreational center; parent-teachers' organizations; boys' and girls' clubs; entertainment programs for community meetings; community resources in teaching the fundamental subjects. Two hours credit.

Course 18. SHORT COURSE FOR COUNTY SUPERINTENDENTS. Offered July 19-23. See Summer Bulletin. Rural school supervision; records and reports of county superintendents; school board meetings; principles of school consolidation; rating the efficiency of teachers; the training of teachers in service; standard tests and measurements in the rural schools; school laws; boys' and girls' club work; teachers' records and reports; school exhibits; county field meets. This course will be given by specialists in the particular lines indicated. Non-credit course.

Course 53. RURAL EDUCATION. This course will be organized for teachers of experience, principals of village and rural high schools, and supervisors of rural schools. The larger problems of rural education: (1) School and community; (2) hygiene and rural community sanitation; (3) community recreation; (4) the rural church; (5) the rural home; (6) model curricula for rural common schools and rural high schools; (7) school consolidation; (8) the district and county plan of school organization. A basic text will be used, supplemented by reading the reports of state superintendent, school surveys and other appropriate material. Three hours credit.

Course 62. THE ADMINISTRATION OF VILLAGE AND CONSOLIDATED SCHOOLS. The state's relation to education, types of state educational organization; county and district organization; the school board; the principal and his teachers; pupils, parents and the public; grading systems; introducing standard tests; attendance, curriculum and organization; the health of the school child; play and physical activities; school equipment; records, accounts, and reports; problems of the consolidated school. Three hours credit.

Course 16. STANDARD TESTS AND MEASUREMENTS IN IMPROVING INSTRUCTION IN RURAL SCHOOLS. Practical training in the use of the standard reading, writing, arithmetic, spelling and history tests and scales in order that rural-school teachers may compare the work of rural pupils with each other and with the attainment of pupils of cities. Two hours credit.

MUSIC.

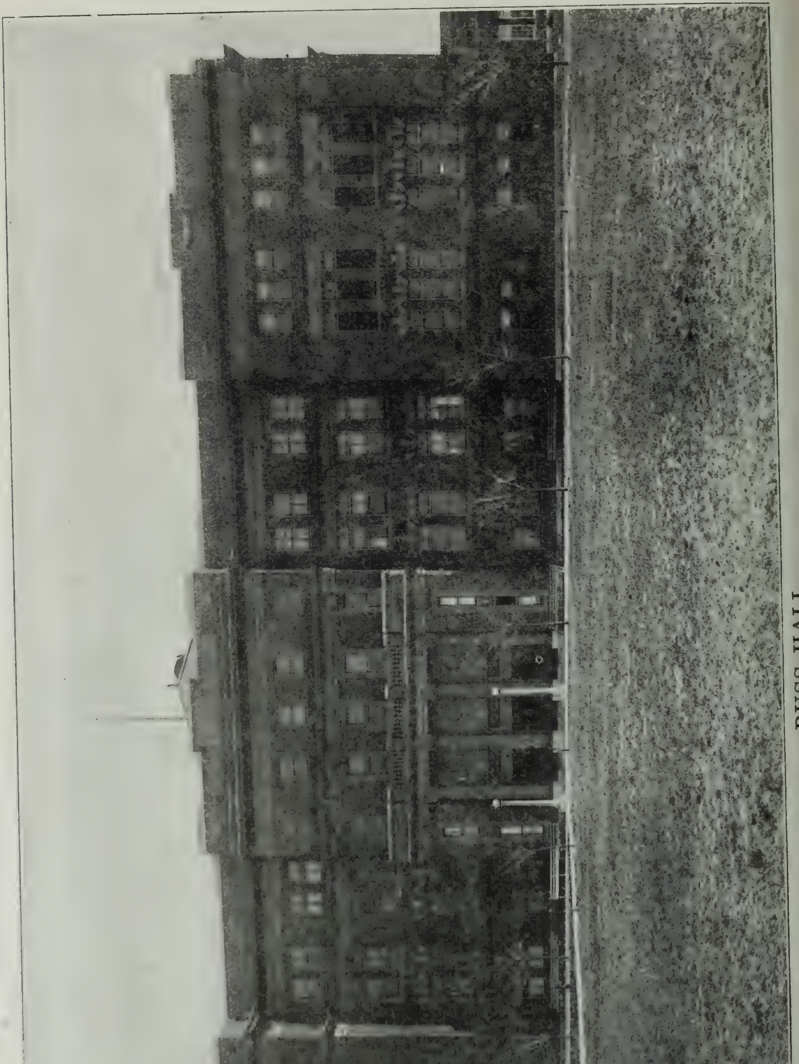
(See section X, page 243.)

PUBLIC SPEAKING.

(See section III, page 107.)

PHYSICAL EDUCATION.

(See section III, page 104.)



RUSS HALL.

ADMINISTRATION BUILDING AND COLLEGE OF LIBERAL ARTS.

SECTION IV.

Industrial Arts.

THE FACULTY.

William A. Brandenburg, Ph. B., President.
A. H. Whitesitt, B. S., Professor of Industrial and Applied Arts.
F. H. Dickinson, Assistant Professor of Industrial Arts.
Charles R. Wasser, Jr., Assistant Professor of Industrial Arts.
Ralph W. Erskine, Assistant Professor of Industrial Arts.
H. V. Hartman, Assistant Professor of Industrial Arts.
L. E. Reppert, B. S., Assistant Professor of Industrial Arts.
Chas. F. Kopp, B. S. in E. E., Assistant Professor in Industrial Arts.
Frank Deerwester, A. B., Pd. M., Pd. D., Associate Professor of Education.
Ermine Owen, M. A., Professor of English.
G. W. Weede, B. S., D. D. S., Director of Physical Education for Men.
J. A. G. Shirk, M. S., Professor of Mathematics and Applied Mechanics.
O. F. Grubbs, A. B., B. S., Associate Professor of History.
G. W. Trout, M. A., Professor of Sociology.
O. P. Dellinger, A. B., Ph. D., Professor of Biology.
George V. Emery, A. B., Associate Professor of Physical Sciences.
Wm. H. Matthews, Assistant Professor of Physical Sciences
D. M. Bowen, A. B., Professor of Education.
C. O. Van Dyke, M. A., Associate Professor of Mathematics.
Paul J. Alyea, Assistant Director of Physical Education for Men.
L. E. Curfman, B. S., B. S. in C. E., Associate Professor of Mathematics and Applied Mechanics.

INDUSTRIAL ARTS.

OUTLINE OF COURSES.

The figure immediately after the subject indicates the number of the course. The other figures indicate the number of semester-hours credit given for the course.

DEGREE COURSE.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work*	4	Shop Work	4
Drawing†	2	Drawing	2
Psychology 7	3	English 1	4
Physical Education 1	1	Physical Education 2	1
Electives‡	6	Electives	5
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Industrial Mechanics 8	3	Strength of Materials 13	2
Modern Education 2	3	Industrial History 51	3
Electives	3	Electives	4
	15		15

JUNIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Mechanism 20	2	English	4
Education	3	Principles of Education 62	3
Economics 52	3	Organization and Administration of Ind. Arts 63	2
Electives	2	Electives	1
	16		16

SENIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Education 51	3	Sociology 58	3
Industrial Physics 23	2	Industrial Physics 33	4
Physical Education	1	Physical Education	1
Electives	2	Electives	1
	15		15

LIFE CERTIFICATE COURSE.

Students who have attended the State Manual Training Normal School one semester, and who have completed eight hours of professional work in addition to the requirements outlined below, three of which must be Practice Teaching entitled to a Life Certificate for teaching in the grades, elementary two-year and Junior High Schools.

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* Students should consult with the head of the Industrial Arts Department concerning the required shop work and the order in which it should be taken.

† The drawing to be taken is determined by the shop course selected.

‡ In addition to the professional work outlined above, three hours of Practice Teaching in the Department is required of all students.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work*	4	Shop Work	4
Drawing†	2	Drawing	2
Psychology 7	3	English 1	4
Physical Education 1	1	Physical Education 2	1
Electives	6	Electives	5
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Industrial Mathematics 8	3	Strength of Materials 13	2
Modern Education 2	3	Industrial History 51	3
Electives	3	Electives	4
	15		15

SPECIAL CERTIFICATE COURSES.

SPECIAL THREE-YEAR CERTIFICATE.

The Kansas legislature of 1915 gave the normal schools of Kansas the power to issue special certificates to teach manual training and other occupational subjects. In accordance with this act of the legislature, the Faculty of this institution has provided special courses for those desiring to teach in the senior or four-year high schools. A special certificate will be issued authorizing them to teach such subject or subjects upon the completion of the following outlined course. This course must embrace the following: major subjects, 24; minor subjects, 12; education, 11; 3 of which must be practice teaching; physical education, 2; electives, 13.

By minor is meant credit hours in subjects from any other department in which candidate is not necessarily specializing, but which he chooses as his second preference, such arrangement being made to accommodate those who may desire or be required to teach subjects outside of their department.

The choice of this minor should be made upon the advice of the head of the department in which the major is chosen.

In cases where candidates desire to be certificated to teach a minor subject or subjects, the twelve hours designated for such subjects may be considered elective, and may be chosen from any subjects in accordance with courses catalogued.

This special certificate in industrial arts will be issued for a period of three years, and may be renewed for a period of three years, provided thirty additional hours of college work has been completed, of which eight hours at least must have been selected from this department, and four hours in education. The special certificate may be renewed a second time only upon the completion of thirty additional hours of college work, which must be chosen to meet the course requirements of the major, and instead of a special certificate the candidate will then have completed his full college course, and will be issued the bachelor of science degree in education, which will authorize him to teach in any of the public schools of Kansas for life.

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* Students should consult with the head of the Industrial Arts Department concerning the required shop work and the order in which it should be taken.

† The drawing to be taken is determined by the shop course selected.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work*	4	Shop Work	4
Drawing†	2	Drawing	2
Psychology 7	3	English 1	4
Physical Education 1	1	Physical Education 2	1
Electives	4	Electives	3
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shop Work	4	Shop Work	4
Drawing	2	Drawing	2
Industrial Mathematics 8	3	Strength of Materials 13	3
Modern Education 2	3	Industrial History 51	3
Electives	3	Electives	4
	15		15

INDUSTRIAL ARTS.

A. H. WHITESITT, Professor.
F. H. DICKINSON, Assistant Professor.
C. R. WASSER, Assistant Professor.
H. V. HARTMAN, Assistant Professor.
L. A. REPPERT, Assistant Professor.
R. W. ERSKINE, Assistant Professor.
C. F. KOPP, Assistant Professor.

The entry of America into the World War revealed the fact that our country is greatly in need of men and women skilled in technical and trade lines. It is a very satisfying fact that we met and solved the herculean industrial problems confronting us, and history will in due time acknowledge the great contribution that our technical institutions and departments made to this marvelous achievement. These institutions must not lose sight of the greater work that they are yet to do if they measure up to the aims and ideals set for them. The Industrial Arts Department of this institution is keeping pace with the aims and ideals imposed by these new world conditions.

We are living in a greatly changed world, socially and economically. It behooves each individual to conserve and utilize his time by acquiring that knowledge which will increase his hope as well as his salary, secure more economic independence, and fit him for greater and higher social service. This department is offering that opportunity by greatly intensifying its existing courses and by the addition of many new and vital ones. We have long held an enviable position in the industrial education field: first, because our institution was conceived in a spirit of service to our commonwealth, and has been unusually fortunate in having as its Faculty men and women with this same unselfish desire to serve. This department is no less fortunate than the institution of which it is a part, for its Faculty vies with all others in its efforts to give its greatest service to those whom it serves. This we would hold as our greatest asset. Second, ours is one of the best industrial arts buildings in the country. It is commodious, well lighted and sanitary, and is equipped second to none. This department is prepared to meet the new and greater demands.

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* Students should consult with the head of the Industrial Arts Department concerning the required shop work and the order in which it should be taken.

† The drawing to be taken is determined by the shop course selected.

SPECIAL PROFESSIONAL COURSES.

Course 1. Observation and Practice Teaching. Splendid opportunity obtains in conjunction with the Training School and High School departments to observe and teach classes under the usual school conditions. This course is required for all certificates and the degree. Three hours credit in Department of Education.

Course 2. Methods of Teaching Industrial Arts. A course contemporaneous with observation and practice teaching. In includes a study of the principles of teaching with reference to the industrial arts; methods of teaching, constructive criticism and typical lessons observed and resulting discussions. Lectures, reading and written work.

Course 63. Organization and Administration of Industrial Arts. This course deals with the principles underlying the organization of shop courses. A study is made of the organization of some of the best industrial and vocational schools; relation of industrial arts to other school courses; administration and supervision of an industrial arts department; planning equipment; cost of equipment and maintenance of courses in elementary and secondary schools; specifications for equipment and supplies. Two hours credit in the Department of Education.

WOOD WORK.

Course 1. Bench Work. A course which aims primarily to give training in the technical processes as a basis for teaching in the Junior High School. An effort is made to balance theory and practice. A portion of the time is given to demonstrations and lectures and discussions on methods of teaching and courses of study. Students prepare and present lessons and demonstrate tool processes as they would be given to a public-school class. Throughout the term outside reading is required on such subjects as tools and tool processes, principles of construction, fastenings—nails, screws, dowels and glue. Four hours credit.

Course 5. Wood Turning. Consists of instruction in the care of the lathe and tools, and in making a series of exercise pieces which give familiarity with the principles involved in roughing and turning cylinders, square ends, tapes, square corners, "V" cuts, beads and coves; and in face plates, chuck and mandrel work. Correct grinding and honing of cutting tools is taught. Each piece of work introduces a new tool process, and a careful study is made of the relation between the tool and the revolving wood, so that a student understands the reason for handling a tool in a particular way for each cut. Each exercise will be followed by a practical application of the principle learned. Prerequisite, course 1. Four hours credit.

Course 59. Advanced Wood Turning. A course designed for those who may desire to master some of the more difficult problems in turning. Some simple work is given, but the work is chiefly face plate and chuck work, in which problems are given involving accurate fitting of parts, such as boxes and mirror frames. Built-up and inlay work also receives attention. Instruction and practice in finishing—staining, dyeing and polishing—receives a large place in this course. Prerequisite, course 5. Four hours credit.

Course 9. Furniture and Cabinetmaking. A course devoted largely to teaching the principles, the use and care of the tools and machines with which the cabinetmaker works. Emphasis is placed upon the construction of period furniture with modern adaptations, including caning, upholstering with leather, tapestry, etc.; inlaying and veneering—both flat and curved. This is a course restricted to those with a high degree of manipulative skill and a keen appreciation of good design. Prerequisite, courses 1 and 5. Four hours credit.

COURSE 11. ELEMENTARY WOOD WORK. This is a beginners' course, and planned chiefly for teachers in town and rural schools. It consists of instruction in the use and care of the simple hand tools and principles of simple construction. Enough drawing is taught to familiarize the student with the elementary principles underlying the production of a working drawing, and enable the worker to readily read blue prints and other drawings. Some study is also made of the common kinds of woods and of simple methods of finishing, as staining, shellacking and waxing. Two hours credit.

Course 13. VENEERING AND INLAYING. This will be a complete course, and will familiarize the student with the process of veneering from the standpoint of utility as well as the more artistic phase of the work. All teachers of wood work, and others experienced in the handling of woodworking tools, will find this course very useful and interesting. The work will include the study of materials, the selection and treatment of the different kinds of veneers; the use (possibilities and limitations) of various glues—animal, vegetable and waterproof; the preparation of materials, involving matching, joining and tapering of veneers; treatment of core and cauls; the rubbing method and application by pressure to curve or plane surfaces; inlaying of lines, borders and inserts, with the possibility of making and laying some simple decorative pieces of marquetry; the handling and further preparation of veneered surfaces for finishing. The old and new methods of laying veneers will be practiced or demonstrated. All work will be practical in its nature, suggestive and helpful to any one who wishes to make use of veneering in his school. The theory will be practiced on small objects, such as plain and fancy panels, checkerboards, picture frames, tray bottoms, lap boards, sewing or other small boxes, and clock frames. Two hours credit.

Course 15. ELEMENTARY WOOD FINISHING. Includes the finishing of a series of small panels of different kinds of woods; a study of different kinds of stains, each in relation to the character of the wood, its formula and its application; the relative values of oil, shellac, wax and varnish under varying conditions. Care and upkeep of the finishing room; care and use of brushes, cups, pails, and rubbing materials. The latter part of the term's work will be given to the finishing of small projects. Four hours credit.

Course 17. HOME MECHANICS. This course is planned to meet the needs of teachers in rural communities. In such communities there should be less cabinet making and more of that type of work which will function into the community's needs.

The first part of the term is given to constructing plain, simple projects, such as boxes, benches, ladders, poultry appliances, concrete forms, etc. Some time will be taken to acquaint the student with the possibilities and use of concrete. The remainder of the time will be spent upon the construction and repair of sheet metal projects, such as kitchen and laundry utensils. Four hours credit.

Course 19. PATTERN MAKING. Provides a thorough training in the reading of shop drawings, and their interpretation in the form of completed patterns. The student is taught the meaning and necessity of draft, the use of core prints, and making of core boxes; shrinkage of iron and other metals; its effect on different shapes and thicknesses of castings; how to join lumber to prevent warping and shrinkage of patterns; the use of segmental work; the meaning of such terms as fillet, boss, flange, ribs, web, etc. Lectures and demonstrations will occur at frequent intervals. Finishing will receive its proper attention. All of the patterns made will be molded by the student making them, and any errors will thus be brought to the attention of the particular student. A study will be made of all the interests involved in the foundry of each pattern. Four hours credit.

Course 51. Mill Work. This course emphasizes the practical work of power machinery. The shop is equipped with universal saws, band saws, jointers, planers, mortisers, shapers, tenoner, belt-sander and gluing facilities. The practical work includes cutting of stock for construction in mill-work problems, such as work benches, science tables, chairs, desks, book cases, doors and screens. The shop is organized as a producing factory in which economy of production is the dominant feature. A course open only to those of proven ability. Prerequisite, courses 1 and 9. Four hours credit.

Course 53. Technology of Woodworking. A study of the structures and properties of wood; characteristics and distribution of the common species; the growth and care of woods in the forest; source of supply and markets; lumbering, sawmilling; woodworking tools; fastenings—common joints, nails, screws, bolts, cabinet hardware; glue—kind, strength, manufacture. Prerequisite, courses 1 and 9. Two hours credit.

Course 25. Saw Filing and Care of Machinery. A study of saw filing, including filing, setting, swedging and gumming of different kinds of saws; makes as to characteristics and quality; files—kinds and use; knife tool sharpening and adjusting; woodworking machines—manufacturers' power and power transmission, speeds, bearings, care and repair; shop planning and installation of machinery. Prerequisite, course 1. Two hours credit.

Course 55. Carpentry. This course is planned to give the student a practical working knowledge of house construction. The construction work consists of the actual construction of a house on a permanent site. or a section of a house in the shop, the students placing and leveling sills and floor joists, erecting walls, plumbing walls, cutting and placing common, hip and valley and jack rafters; framing porch, etc. The square being used to frame all work, it is essential that every workman should have a thorough and practical knowledge of its capabilities and applications, and this course is to aid in acquiring that knowledge. Enough outside finish, such as cornice work, shingling, setting frames, siding, and porch finish, is given to acquaint the student with the best methods of commercial practice. Additional practice offered in cutting and placing jambs, fitting and hanging doors and sash, inside finish, fitting hardware, laying and scraping floors. Especial emphasis is placed upon stair work, laying out, cutting and placing rough stringers for steps; mode of laying out ordinary straight stairs; laying out winders; finishing with risers, treads and skirt boards; method of laying out and working hand-rails for quarter-turn and winding stairways. Prerequisite, courses 1, 5, 21. Four hours credit.

Course 57. Advanced Pattern Making. Students who have completed elementary pattern making, or who have had commercial practice, may take up the work of this course. The aim is to assign patterns that will supply the individual needs of the student as far as possible. Patterns for complete machines, such as lathe, drill press, gas engine, etc., make up the work of the course. Four hours credit.

METAL WORK.

Course 2. Elementary Forging. This course includes the construction of different kinds of forges, care of the fire, selection of coal and the making of coke; proper use of tools; heats for the working of different materials; exercises in drawing out and upsetting; the making of welds; practice in bending and forming, fullering and swaging, drilling and riveting, heading and thread cutting. Four hours credit.

Course 4. FARM FORGING. A course designed to serve the farm community in the care and repair of farm machinery. It includes instruction in building and care of the fire, the correct use of hammer, tongs and anvil tools; the making of simple forgings, as bolts, hooks and clevises; the sharpening and tempering of plowshares, cultivator teeth, etc. Helpful suggestions and advice concerning the equipment for a farm shop. Two hours credit.

Course 6. AUTOMOBILE FORGING. This is a special course for those students who are specializing in automobile work. It is a brief course dealing with the elements of forging and the making of such tools as are needed for garage work. Two hours credit.

Course 59. ART SMITHING AND ORNAMENTAL FORGING OF ANDIRONS, FIRE SETS, LANTERNS, LAMPS, CANDLESTICKS. Designs are worked out in design department. To be admitted to this course students must show ability and adaptability to do this work. Prerequisite, course 1. Four hours credit.

Course 10. BENCH AND ELEMENTARY MACHINE SHOP PRACTICE. This course is planned to give the student the correct idea as to the use of hand and small machine tools, the theoretical and practical work for the beginner. It consists of a series of exercises on the bench, such as chipping, filing to fit, laying out, centering and machine drilling, scraping to a surface, tapping and threading with hand dies. From bench work the student receives a good insight as to the work done on the machine. Elementary work on the machine consists of taking of notes relative to the working speeds and feeds of machine in different metals, also the grinding of drills and tools for several metals to get the best results from these grindings. The practical part of this course is the use of all lathes, planers, sharpers, drill presses, saw and plain milling machine work. In lathe work we do straight cylindrical taper turning, and boring, shouldering, parting chuck work; the cutting of single, V and U. S. standard threads; hand-turning and knurling. Planer and shaper work consists of straight, angle and oval cutting, key-seating and slotting. In milling work we do plain-end, face and straddle milling, slotting, sawing and key seating. Prerequisite, course 2. Four hours credit.

Course 12. GENERAL MACHINE SHOP PRACTICE. This course is a continuation of course 10, designed for the student's use in machine construction, millwriting and general repair work. Machine construction is the making of small machinery, instruments and tools, the cutting of multiple threads on the lathe; also square, worn and acme threads; the use of the universal milling and grinding machines, such as using the dividing head, plain and different indexing, vertical milling and slotting; making spur, spiral, bevel and worm gears, and plain and cylindrical grinding on the grinder. Prerequisite, course 10. Four hours credit.

Course 52. TOOL AND DIE MAKING. Tool and die making is more advanced work in shop practice. In this course mathematics plays an important part. The practical part consists of the making, annealing, hardening and tempering of all milling machine tools or cutters and of the hand tools, such as mandrels, taps, dies, reamers, drills and all necessary small tools. Internal grinding is also given, and the making of jigs. Die making consists of the making, annealing, tempering, etc., of dies and punches for practical use on our punch press. Prerequisite, courses 10 and 12. Four hours credit.

Course 14. SHEET METAL. An elementary course involving simple problems which give practice in the processes of cutting, wiring, grooving, riveting, seaming, forming, edging, filing and soldering. The tool and machine processes used in the construction of these problems is the basis of the mechanical part of the sheet-metal trade. Four hours credit.

Course 16. FOUNDRY. Lectures are given on the following: Foundry terms, tools and flasks, molding sand, green sand molding, facing, core sand and mixtures, binders and cores, metals and pressure in molds, core ovens, fluxes, and their uses, brass furnaces, etc. Demonstrations of molding: green and dry sand molding and loam work, ramming, venting, parting, gateing and other practical processes. Molding practice: cutting and tempering of sand, two and three-part and check-flask work, bedding in, sweep work and open-sand molding. Core making: mixing core sand, making, baking and setting cores. Use of brass furnace: firing, melting, mixing, skimming and pouring nonferrous metals. Cupola practice: lining, making bottom and breast, drying, firing, charging, mixing metals and melting, pouring, skimming and chipping castings. Four hours credit.

Course 1*b*. AUTOMOBILE MECHANICS. There is an increasing demand for men qualified to teach automobile work, gas engine, etc. This course is designed for Manual Training teachers who expect to teach this work. A combination of theory and practice in the repair of the automobile, with special emphasis on the outlining of courses, equipment, method of teaching, etc. Four hours credit.

INDUSTRIAL ARTS DRAWING.

Course 1. ELEMENTARY MECHANICAL DRAWING. Proficiency in the use of drafting instruments, knowledge of the conventions and methods of drafting-room practice, an understanding of projection and working drawings through the making of a series of working drawings. Lettering exercises, both capitals and lower case. Directions for sharpening the pencil and laying out the sheet. Line conventions; use and care of the ruling pen. Geometrical constructions include lines, angles, polygons, circles and tangents. Orthographic projection study of first and third angle. Projection of line, point and solids on planes. Each problem begins with the making of a sketch in pencil and then a penciled working drawing, followed by an inked tracing and a blue print.

The importance of good workmanship is emphasized throughout the course and good technique is required. Two hours credit.

Course 2. FREE-HAND DRAWING AND DESIGN. The first part of this course is designed to develop ability to "see" an object and to give adequate, accurate, and rapid expression by means of pencil and blackboard sketches.

The second part of the course is a study of the principles underlying good design—line and space composition, rhythm and proportion. Throughout this course, the problems used will be those especially adapted to the needs of industrial arts teachers. Prerequisite, Mechanical Drawing 1. Two hours credit.

Course 3. PROJECTION DRAWING. Analytical study of orthographic projection of line, points and solids. Fundamentals of projection are emphasized in problems dealing with revolutions, sections, intersections and surface developments—pattern developments suitable for use in sheet-metal work.

A study of pictorial projects such as isometric, oblique or Cavalier and Cabinet projection. Prerequisite, courses 1 and 2. Two hours credit.

Course 4. FURNITURE DESIGN. The dominating purpose throughout this course is to stimulate in the student a conception of furniture as an expression of beauty. The course consists of a series of problems from the design of simple chairs and tables to more complex types of furniture. Emphasis is placed upon the development of types with modern adaptations. Rendering in colors is a feature. Prerequisite, courses 1, 2 and 3. Two hours credit.

Course 5. ELEMENTARY MACHINE DRAWING. A study of standard bolts, nuts, screws, keys and pins with their standard conventions. Use of tables and machinist and engineer hand books. Drawing of machine parts such as hand wheels, eccentric sheave, engine crank, connecting rod end, crane book, clutch coupling, piston rod, stiffing box, etc. Execution of working sketch of casting on regular cross-section paper, followed by working drawing, tracing and blue print.

Study of cam motions and simple elementary gearing. Prerequisite, course 3. Two hours credit.

Course 60. ADVANCED MACHINE DRAWING. A course planned to meet the needs of those who teach in the more advanced high schools and those who may wish to engage in commercial shop drafting. The course deals largely with the theory applied in practical work in the transmission of power by means of belt and rope drives, cams and crank motions, gears—spur, rack and pinion, worm gear, internal gear; graphics, and the design of special apparatus. Prerequisite, courses 3 and 5. Two hours credit.

Course 61. MACHINE DESIGN. Problems in machine design. The application of equations of formulas to problems under construction, with a study of the materials used. Calculation of stresses and strains in the design of engines, etc. Sketching and drafting intricate machinery, with assembled and detailed drawings. Bill of materials, tracing and blueprinting. Prerequisite, course 60. Two hours credit.

Course 12. ELEMENTARY ARCHITECTURE. A practical course in reading and understanding house plans. The course deals directly with the requirements of the prospective home builder. A study is made of a typical plan which will involve the essential elements of a modern home, one- and two-story, with reference to location, lot, finance, suitable plan, arrangement of rooms for convenience, light, sanitation and heat, materials and cost. Prerequisite, course 1. Two hours credit.

Course 62. ARCHITECTURAL DESIGN. The designing of a modern residence with reference to its location, plan, convenience, sanitation, heating, lighting, and materials. Working plans and elevations, with detail drawings of special interior and exterior constructions. The instructions must conform to the actual practice in building operations. Each student is expected to design a house which he would build for himself. Other constructions, as schoolhouse, barn, etc., may be substituted or included. Prerequisite, course 12. Two hours credit.

Course 63. SPECIFICATIONS AND ESTIMATES OF COST. A study of the modern house in relation to the cost of a medium-priced home. Cost of materials, types and exteriors, plans and heating systems. Detailed specifications for the home designed in course 62. Prerequisite, courses 12 and 62. Two hours credit.

Course 65. DESCRIPTIVE GEOMETRY. A course intended chiefly for those who desire to specialize in mechanical drafting. Solutions of problems relating to point, line surface, with intersections and developments and their application to practical shop problems. Two hours credit.

PRINTING.

Experience has shown that printing can be made a vital force in the teaching of English. This concrete application of the rules of good English fixes them in the pupil's mind in such a way that he seldom forgets their use.

Printing being the fifth industry in the United States in the number of people engaged, the public schools are justified, if not under obligation, to make provision whereby every boy may learn something of this great industry. Its value as a prevocational as well as a vocational subject has been proven.

The following new equipment has just been installed which enables us to print "The Manualite" and much of the school printing in our own shop: Model 8 linotype, Cottrell two-revolution, 38-inch, cylinder press, two stones, proof press, about thirty fonts of display type, and various borders and ornaments. This makes our instruction more practical and gives us a much broader scope of the printing art.

Course 1. Takes up the elements of printing, such as the study of type, printer's measure, type cases, proof reading, the press, etc. Mechanical operations are emphasized. Practical work is given in general typesetting and operating the press. Four hours credit.

Course 2. This is a continuation of course 1, in which design is emphasized. Practical work is offered in color printing, selection of paper stock, composition of letterheads, envelope forms, business cards, programs, and books, and the making of wood cuts. Throughout the course there will be discussions on what to print in our public schools and how to proceed. Prerequisite, course 1. Four hours credit.

Course 3. LINOTYPE OPERATION AND ELEMENTARY MECHANICS. This course will deal largely with the operation of the linotype, giving only the mechanical instruction required in operation. Special attention will be given to correct keyboard fingering, and development of speed. Prerequisite, courses 1 and 2. Four hours credit.

Course 4. LINOTYPE MECHANICS. This will be a continuation of course 3, with special emphasis placed on the mechanism of the linotype in general. Four hours credit.

EDUCATION.

D. M. BOWEN, Professor.
FRANK DEERWESTER, Associate Professor.

Course 7. GENERAL PSYCHOLOGY. The purpose of this course is to give the students a working knowledge of the accepted facts and general principles of phychology. In order to give a fair representation of the science as a whole, the descriptive, structural and dynamic phases of psychology are discussed. The point of view is on the whole functional, more attention being paid to what the mind does than to what it is. Discussions, outlines, readings, reports and simple experiments. Offered each semester. Three hours credit. Prerequisite for all other courses.

Course 2. MODERN EDUCATION. The purpose of this course is to introduce the student to the best in modern educational ideas and educational practice. As a basis for this course the essential facts of modern educational development will be reviewed. Three hours credit.

Course 63. ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL ARTS. This course deals with the principles underlying the organization of shop courses. A study is made of the organization of some of the best industrial and vocational schools; relation of industrial arts to other school courses; administration and supervision of an industrial arts department; planning equipment; cost of equipment and maintenance of courses in elementary and secondary schools; specifications for equipment and supplies. Two hours credit in the Department of Education.

Course 62. PRINCIPLES OF EDUCATION. A course in the art of teaching, based principally upon the science of psychology. A discussion of the principles of psychology which are involved in teaching and their application in the work of the classroom, laboratory and shop. The following problems are analyzed and discussed, showing the interdependence of the various aspects of teaching method and the unity involved in mental development; attention and interest; the formation of habits; memory and the principles of memorizing; imagination, its development and use;

thinking and reasoning; transfer of training; types of classroom exercises; how to study; individual differences. General Psychology a prerequisite. Three hours credit.

Course 51. SCHOOL ADMINISTRATION. A study of the larger problems of administration; the relation of the state to education; the various units of school organization, district, township, county, state and nation; the various administrative officers, their powers and duties; the teaching staff and present tendencies of education administration in America. Offered spring semester. Three hours credit.

For electives in Education see section II, page 65.

ENGLISH.

ERMINE OWEN, Professor.

Course 1. CONSTRUCTIVE ENGLISH. The formal side of English, both written and spoken. A study of the paragraph, of sentence forms, of punctuation, letter writing and formal notes. The entire course correlated with a study of American Classics and the late war literature. Four hours credit. Open to freshmen.

For the four additional hours required, the student will consult with the heads of the Industrial Arts and English Departments.

For electives in English see section II, page 70.

HISTORY AND SOCIAL SCIENCES.

G. W. TROUT, Professor of Sociology.
O. F. GRUBBS, Associate Professor of History.

Course 51. INDUSTRIAL HISTORY. A careful study of our natural resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to the present time. Besides the use of a text the students are required to prepare papers and read them before the class for discussion. Offered three hours per week during second semester of sophomore or junior year, college course. Three hours credit.

Course 71. ECONOMICS. This course is designed to give the student a general view of the theory of economics and to lay special emphasis upon the present economic methods of wealth production and distribution with special reference to modern economic problems. Three hours credit.

Course 58. SOCIOLOGY. An introduction to the study of the nature, function and development or progress of society. The same as course 18, but more extended, reciting four times a week and giving four hours credit. This course is designed for those who have never had any work in Sociology and is a prerequisite to all other courses except course 18. Those having course 18 are not eligible for this course. Three hours credit.

For information concerning elective courses in History, Political Science, Economics, and Sociology, see section II course writeups, page 71.

MATHEMATICS AND APPLIED MECHANICS.

J. A. G. SHIRK, Professor.
C. O. VAN DYKE, Associate Professor.
L. E. CURFMAN, Associate Professor.
JACK DOTY, Laboratory Assistant in Applied Mechanics.

Course 8. INDUSTRIAL MATHEMATICS. This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks;

mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; house building; power transmission; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit. Prerequisite, two units of High-school Mathematics, one unit of Physics, or an equivalent experience in Mechanic Arts.

Course 13. STRENGTH OF MATERIALS. A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shatfing and reënforced concrete, resilience of materials. Two hours credit.

Course 20. MECHANISM. A study of the motion of machine parts and of methods of transmission of motion by means of links, belts, gears, and cams. This work is related closely to the machine motions used in the steam engine and various shop machines. Two hours credit.

For electives in Mathematics see section II, pages 79.

PHYSICAL SCIENCES.

G. V. EMERY, Associate Professor.
W. H. MATTHEWS, Assistant Professor.

Course 23. ELECTRIC WIRING. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Two or four hours credit.

Course 33. ELECTRICAL MACHINERY. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment, rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, high-school Physics. Four hours credit.

For electives in the Physical Sciences, see section II, page 57.

PHYSICAL EDUCATION.

G. W. WEEDE, Director of Physical Education for Men.
PAUL ALYEA, Assistant Director.

Course 1. PHYSICAL EXERCISE. This is a course of body-building nature.

Men: Three hours of exercise per week. One hour credit. The course consists of (*a*) One hour of outdoor games while the weather permits. One hour of corrective calisthenics and gymnastic dancing. One hour of apparatus work, pyramid building and tumbling. (*b*) Elective work in intercollegiate athletics for the length of season only, in place of (*a*).

Course 2. PHYSICAL EXERCISE. Three hours of exercise per week. One hour credit.

Men: Continuation of work under (*a*) in course 1. At close of annual gymnastic exhibition all work is out of doors in track or baseball.

For Physical Education in Senior College confer with director.

For electives in this department see section III, page 104.

TRADE COURSES.

These courses are maintained for the purpose of instructing young men in the practice and fundamental principles of manufacturing and building trades. The once prevalent apprentice system whereby boys were bound out to an employer for a term of years, has almost disappeared. In what remains of the apprenticeship systems, the tendency now is, with few exceptions, to train a boy to be a specialist upon one class of work. The first-class, all-round, skilled workman of our country is becoming very rare. The invention and use of automatic machinery which boys are now taught to operate, and the wage which is paid to these boys as operators, are often more than those paid to beginning apprentices; hence most young men prefer to become mere operators of one or a few machines instead of being taught a trade which will give them ability to make the very machines which they control. Employers also are no longer willing to assume the responsibility of teaching trades to boys. They realize the difficulty of securing high-class skilled labor as the present-day shops are organized. The value of any workman to his employer depends upon his experience and his ability and willingness to apply that experience. Experience is valuable according to its composition. It should be composed of both practice and theory. By practice a workman attains skill and speed; by a study of theory he learns why each step is taken. The need for thorough and systematic instruction in the theory and practice of the trades being generally conceded, employers and employees alike are coming to recognize that a properly conducted trade school can and does offer a better preparation for industrial efficiency than can be obtained by working at a trade commercially. It has been shown that a boy can, by close application to work under competent instructors, learn more and learn in a better way in one-half the time required in a commercial shop.

It is not the claim of this school to turn out journeymen mechanics, but it does claim to instruct its students thoroughly and systematically in the shortest time possible in the fundamental principles and in the practice of the trade being learned, so that a student, upon graduation, possesses ability and sufficient confidence in himself as will be of immediate practical value to his employer, and he receives a fair and just remuneration at once. Students completing their course should be at least on a par with the apprentice who has served four years under commercial shop conditions.

INSTRUCTORS AND INSTRUCTION.

In every case the instructors are men of practical experience and skill, fully competent to teach the best modern methods and theory.

The scheme of instruction provides for extensive practice with the tools of the trades offered, for such instruction in drawing, mathematics, applied science, and trade theory as may be necessary to enable the students to read blue prints, make calculations, and understand in a general way the natural laws governing their work.

All regular students in the day school are required to attend classes in the supplementary subjects, and those in the evening classes are advised to if the need seems to justify it.

QUALIFICATIONS FOR ADMISSION.

The regular day school is open to men and to boys over fourteen years of age. Persons over sixteen years of age who are regularly employed during the day are permitted to enroll in the evening classes. The term "evening school work" is considered to mean school work given to persons at hours other than those of actual employment. The term is descriptive of the kind of work rather than of the particular time of day when the class is in session. Persons working in the night shifts can be taught in classes held in the morning or afternoon and be regarded as evening instruction.

LENGTH OF COURSE.

The work as planned covers a period of two years. The instruction is almost wholly individual, and a student's progress depends almost entirely upon his previous education and experience, his aptitude for the trade he has chosen, and his diligence. The school aims primarily at thoroughness, and students are required to follow courses as outlined. The only exception to this rule will be made in the case of mature students who have already made a beginning at their trades before entering the school and who can remain for only a part of the year.

ATTENDANCE.

It is taken for granted that every student will attend regularly and work diligently, for only by being present and working diligently can one expect to accomplish the work laid out in any given course.

Any student who because of circumstances unavoidable is obliged to withdraw before a course is completed will receive credit for work satisfactorily done.

CERTIFICATES OF GRADUATION.

Each student, when he has completed the prescribed work in his course, will be given a certificate of graduation. Those who are compelled to leave the school before completing the prescribed course will, upon request, receive a statement of the work completed while in attendance.

THE TRADES OFFERED.

MACHINIST AND TOOL MAKING.
PATTERN MAKING.
AUTOMOBILE WORK.
CARPENTRY.

MACHINE SHOP.

The instructions in this course of machine-shop practice provide for the thorough training of the student who wishes to become a competent, all-round machinist.

This course consists of shop work and instructions in a practical way. Students work from drawings and blue prints.

FIRST YEAR.

First Term. Drill-press work. Simple forging. Use of all common tools and their construction. Laying out, drilling, chipping, filing, tapping and threading with taps and dies. The proper use of all measuring instruments.

Second Term. Tool dressing and tempering, shaper, planer, lathe and milling machine work.

Third Term. Elementary tool grinding and a continuation of Nos. 1 and 2 of various kinds of machine work. Leveling and aligning of different kinds of machine equipments.

SECOND YEAR.

First Term. Work on drill press, shaper and planer. Advanced lathe work, including centering up, chucking, faceplate work, turning and boring straight and taper. Size and form turning, milling machine work, end, slab and gang milling.

Second Term. Vertical and horizontal shaping and planing work. Use of grinding machine on external and internal work, straight and angular. Floor work, compound and differential indexing, spiral cutting, etc.

Third Term. Review of all machine and bench work. Tool making and milling-machine work.

Instruction throughout the course in forge work, hardening and tempering. Care of belts, machine-shop material, emery wheels, threads and methods. Grinding and classification of steel. Design and use of gigs, punches and dies.

APPLIED MATHEMATICS.

Course 1. MATHEMATICS FOR MACHINISTS. Review of fundamental operations of arithmetic, common and decimal fractions, powers and roots, percentage, measures and weights, pulleys and belting, tooth gearing, elementary mechanics. The use of simple equation and algebraic formulæ; fundamental concepts of geometry; centers of gravity; triangle and parallelogram of forces; stresses and strains; angle measurements; trigonometry of the right triangle and its applications to shapes of threads, taper turning, and work on the milling machine. A study of machine motions.

MACHINE DRAWING.

CHAS. F. KOPP, Instructor.

FIRST YEAR.

First Term. Use and care of drawing instruments. Free-hand lettering and use of standard letters. Exercise work in use of drawing instruments, such as triangles, T-square, etc. Simple projections.

Second Term. Projections and revolution of solids. Free-hand sketching. Use of cross-section paper. Simple drawing of machine parts. Study of materials as related to cross-hatching.

Third Term. Geometrical problems in relation to trades, their application to shopman and draftsman. Threads, bolts, nuts, and hand-wheel details, etc.

SECOND YEAR.

First Term. Advanced conventions. Tracing and blue-printing. Measuring, sketching and carrying to completion machine parts, such as bearings, pulleys, simple gears, hand wheels, vises and gas-engine parts.

Second Term. Drawing related to direct shop work, such as making complete drawing with all details. Woodworking machines. Drill-press or speed lathe.

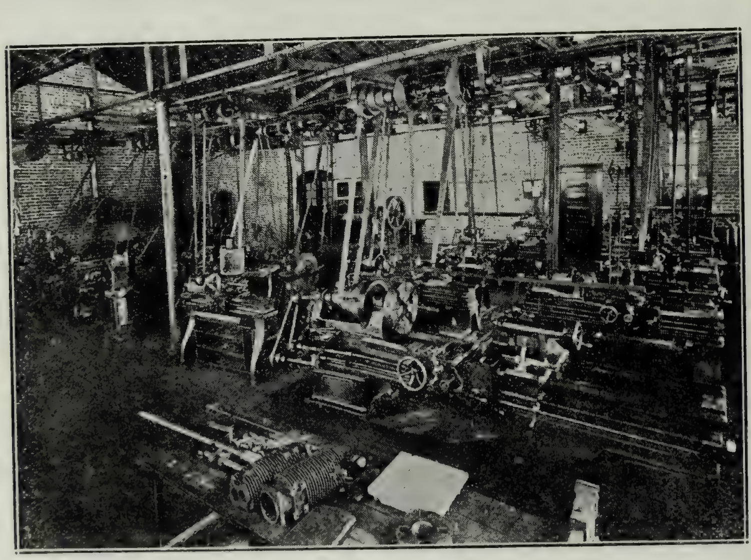
Third Term. Gearing—involute and cycloidal. Cams and motions. Making assembly drawings from details. Elementary design work. Use of handbooks, etc.

PATTERN MAKING.

This course is designed for those who may wish to begin at the beginning, and for those who already know something about the trade and who wish to take up advanced types of work. The instruction throughout emphasizes the relation between pattern shop and foundry. Students work from drawings and blue prints throughout.

FIRST YEAR.

First Term. Care and use of bench tools, such as saws, planes, chisels, squares, boring tools, clamping devices, fasteners, etc. Molding of simple patterns. Demonstrations showing results of back draft, tight dowel pins, and tight dovetail loose pieces. Core making.



Machine Shop.

Second Term. Materials. Kinds and special qualities of woods used for successful patterns. Metals and their characteristics. Simple patterns. Wood turning; use of lathe, spindle turning, faceplate and chucking processes.

Third Term. Laying out patterns. Segment work. Hand wheels, and general pattern work combining lathe and bench work. Lectures on core work and general foundry practice.

SECOND YEAR.

First Term. Built-up patterns, including choice and preparation of stock. Pipe and cylinder body, and pulley patterns.

Second Term. Spur, bevel, and worm gearing.

Third Term. Construction of patterns for complete machine.

Mathematics. Special instruction in calculation of tapers, screws, pitch of bevel, worm, and spiral gears; laying out involute and epicycloidal teeth; screw propellers; shop algebra and trigonometry applicable to laying out work and setting machinery.

APPLIED MATHEMATICS.

Course 1. Mathematics for Pattern Makers. Review of fundamental operations of arithmetic, common and decimal fractions, powers and roots, percentage, measures and weights, pulleys and belting, tooth gearing, elementary mechanics. The use of the simple equation and algebraic formulæ, fundamental concept of geometry, centers of gravity, triangle and parallelogram of forces, stresses and strains, angle measurements, trigonometry of the right triangle and its applications to shapes of threads, taper turning, and work on the milling machine. A study of machine motions.

AUTOMOBILE MECHANICS.

The courses in automobile work have been arranged to give the student a thorough grounding in the principles of the auto gas engines. A combination of theory and practice, that each may supplement and aid the other, is the plan. This course will enable the student to operate the automobile economically; to adjust carburetors, grind valves, and make general repairs. It will teach him the function of differentials, timing, ignition, magnetos, batteries and different wiring systems for lighting and self-starters.

The instruction is given by means of lectures, blackboard sketches, charts, etc., supplemented by constant reference to the parts of the auto which are before the student, after which he tears down machines, makes repairs, and then assembles, under the close supervision and inspection of instructors who are experts in their line. No machine is permitted to leave our shops before it has passed the inspection of the director in charge of our automobile department.

Our courses are so arranged that we can take care of two groups of students—those who may wish only a short and more or less cursory study of the automobile in order to be able to operate their own cars, economically, and those who wish a very comprehensive knowledge—who wish to make this work their vocation. Classes are arranged for each group in both day and evening school.

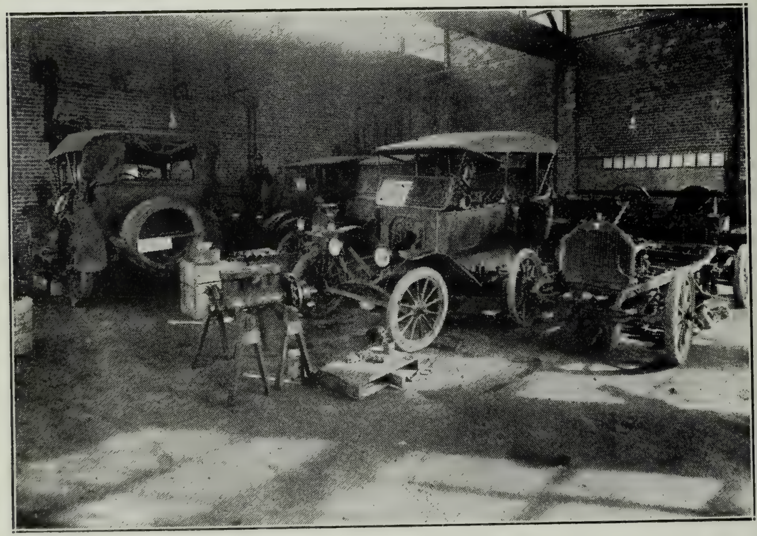
Course 1. Automobile Mechanism and Electricity. This course includes assembly and disassembly of automobile parts to familiarize students with names, functions, and relations of parts; a detailed study of frames, springs, axles and wheels, transmissions, clutches, differentials, carburetors, magnetoes, starters and generators and ignition systems. Location and repair of motor troubles, valve grinding, and testing of motors from the laboratory part of this course. The purpose of this course is to lead the student into full understanding of the car and its essentail parts in order that he may successfully do actual repair work. Four hours credit.

Course 2. Garage Practice. Practical garage experience in overhauling and repairing cars. The garage is equipped with a well-stocked tool room where students may secure necessary tools for all operations. Repair work is done for the public the same as in the commercial garage, therefore the student has an opportunity to do all kinds of repair jobs on all the popular makes of cars. Prerequisite, course 1. Four hours credit.

Course 3. Automobile Drawing. A course planned especially for automobile students, giving drill in free-hand sketching and practice in reading blue prints, charts and sketches. The automobile is the chief source from which all practice is derived.

Course 4. Elementary Machine Shop. A course designed to familiarize the student with the elementary principles of machine-shop practice, which includes chipping, filing to fit, machine drilling, tapping and threading with hand dies, and straight cylindrical and taper turning, shouldering, and chuck work; the cutting of single V and U. S. standard threads. Planer and shaper work in straight angle and oval cutting, key seating and slotting.

Course 5. Advanced Machine Shop. A continuation of course 4, designed for the student's use in machine construction and general repair work. The use of the universal milling and grinding machines; the making of spur, spiral, bevel and worm gears, and plain and cylindrical grinding. Prerequisite, course 4.



Automobile Mechanics.

Course 6. Forging. A course especially for automobile students, involving the simple elements of forging and the making of such tools as is often convenient and economical for the garage worker to be able to do; also for the repairs for cars being overhauled in the shop.

Course 7. Oxyacetylene Welding. A course which gives practice in the use of the oxyacetylene torch for cutting and welding of automobile castings, frames, etc. Two or four hours credit.

Course 8. Vulcanizing. This course includes the actual repair of tubes and casings, such as blow-outs, rim cuts, tread building, etc. The equipment includes a standard Miller vulcanizer for all sizes of casings and for inner tubes and an ample supply of small tools. Two or four hours credit.

CARPENTRY AND WOODWORKING.

The work offered in this trade consists of instruction in carpentry, joinery, cabinetmaking, stair building, and mill work. Students work from drawings and blue prints throughout, and the aim is to give a thorough foundation in all the fundamental processes of woodworking.

Early in the course opportunity is given the student to specialize in those branches of the trade that are of most value to him.

SHOP WORK.

FIRST YEAR.

First Term. Includes a study of tools—as uses, names of parts, adjustments, their care, and how to sharpen; the making of a few important joints, as lap mortise and tenon, gaining and dovetailing, and their application in making useful projects.

Second Term. A study of materials and fastenings—nails, screws, bolts, stirrups, etc. Practical use of joinery exercises in framing sills, plates, girders and ties, and fitting braces. Work on the various woodworking machines. Tool grinding. Setting up machines.

Class in Carpentry.

Third Term. Making window and door frames, porch and cornice work; exterior decoration; making and setting forms for reinforced concrete construction.

SECOND YEAR.

First Term. Balloon framing, timber framing, rafter framing, truss framing, laying joist, framing headers, etc. Setting of partitions, etc.

Second Term. Interior finish, such as jamb casing, baseboarding, mode of laying out ordinary straight stairs. Laying out winders. Kerfing stringers. Laminating stringers, risers and other bent work. Method of laying out and working hand railing for platform, quarter turn and winding stairways. Fitting and hanging doors and windows. Putting on hardware.

Third Term. Erecting buildings and full-sized sections of buildings in the school shop.

Lectures. During the entire course occasional lectures are given on such subjects as the following: Care of edged tools. The various woods used in building. Glue, nails, screws, bolts, pins, straps, and other fastenings. Setting up the various woodworking machines, their use and care. The steel square. Various building ordinances.

The mathematics emphasizes measurements of lumber, and cubic contents and geometrical problems involved in roof framing, stair building, and the use of the steel square. Estimates.

Course 2. MATHEMATICS FOR CARPENTERS. Review of fundamental operations of arithmetic, common and decimal fractions, powers and roots, percentage, measures and weights; forces in structures; fundamental concepts of geometry; angle measurements; trigonometry of the right triangle as applied to framed structures; estimating costs; and uses of the steel square.

The drafting accompanying the carpentry courses covers: Use of drafting instruments, lettering and sketching, orthographic projection. Details of simple cabinet work, window and door frames, sash and interior finish. Working drawings, consisting of scale plans, elevations and sections of houses. Tracing and blue-printing.

CARPENTRY DRAWING.

CHAS. F. KOPP, Instructor.

FIRST YEAR.

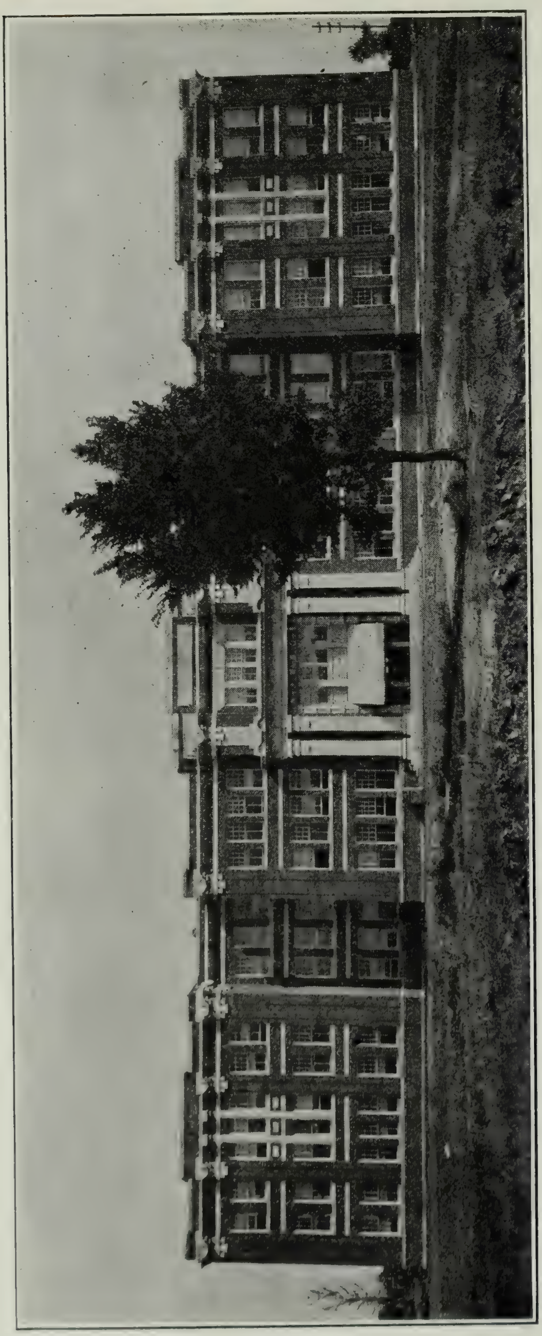
First Term. Use of drawing materials, sketches of simple projections, free-hand lettering—use of architectural lettering, sketches of house plans. Framing details—sills, joists, studs, corner posts, rafter ends, etc. Window and door detail.

Second Term. Sketches of plan for small cottage. Detail framing plan for cottage. Plan of cottage to ¼″ scale. Framing plans for elevations. Tracing and blue-printing. Materials and quantities.

Third Term. Sketches for plan of two-story house. Stair layout and stair detail. Framing plans and elevations. Elevations of exterior. Cost.

SECTION V.

Home Economics.



CARNEY HALL.

HOME ECONOMICS AND BIOLOGICAL AND PHYSICAL SCIENCES.

THE FACULTY.

W. A. Brandenburg, Ph. B., President.

Adele Zoe Wolcott, Ph. B., A. M., Professor of Home Economics and Joint Director.

Agnes Saunders, A. B., A. M., Professor of Home Economics and Joint Director.

Annie Marriot, B. S., Assistant Professor.

Jane Cape, B. S., Assistant Professor.

Edith E. Casseday, Assistant Professor.

Henrietta Pribnow,* B. S., Assistant Professor.

Louise C. Jordan, Ph. B., Assistant Professor.

Evelyn Joan Metzger, Assistant Professor.

Ermine Owen, M. A., Professor of English.

Frank Deerwester, A. B., Pd. M., Pd. D., Associate Professor of Education.

James Anderson Yates, B. S., M. S., Professor of Chemical and Physical Sciences.

Oris P. Dellinger, A. B., Pd. D., Professor of Biology.

D. M. Bowen, A. B., Professor of Education.

O. F. Grubbs, A. B., B. S., Associate Professor of History.

George V. Emery, A. B., Associate Professor of Physical Sciences.

G. W. Trout, A. M., Professor of Sociology.

Margaret Coventry, A. B., Assistant Professor of Chemistry.

F. J. Dobrovolny, A. B., Associate Profesor of Physical Science.

Elizabeth Fleeson, A. M., Associate Professor Biological Science.

John R. Pelsma, Professor of Public Speaking.

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* On leave of absence.

HOME ECONOMICS.

The courses in this department are planned with three purposes in view: (1) To give training in the scientific administration of the home; (2) To train for teaching; (3) To prepare students to pursue some special line of activity, such as dietition and institution manager. The courses offered are classified under four heads, namely: Foods and Nutrition, Clothing and Textiles, Household and Institution Management, and Home Economics Education. The regular courses of the department are supplemented by courses given in other departments, as Biology, Chemistry, Sociology, Drawing, English and Education.

ENTRANCE REQUIREMENTS.

A high-school education or its equivalent is required for entrance. High-school courses in domestic science and art are not required. Students who have taken one or more years of work in foods or clothing in the high school may take examinations over these subjects if they desire. If the examination is satisfactory, Technology of Cookery and Technology of Sewing are substituted for Foods I and Clothing I in their course.

CERTIFICATES AND DEGREES.

Students who have attended the State Manual Training Normal School for one semester and who have met the requirements of the first two years of the course as outlined are entitled to a life certificate for elementary, two-year and junior high schools. A special certificate to teach Home Economics in high schools is issued upon completion of freshman and sophomore work as outlined on page 139 of this catalogue.

Students who have attended the State Manual Training Normal School for one year and who have completed the four-year course as outlined below will be granted the degree of Bachelor of Science, which degree is a life certificate to teach in any elementary or high school in the state of Kansas.

REQUIREMENTS.

The work of the first two years is specifically outlined. At the beginning of the junior year students have the privilege of majoring in any one of the four divisions given above. For example, the student majoring in Foods and Nutrition will select from this division the required number of hours designated as home economics major in the junior and senior year.

One hundred and twenty-four hours are required for graduation from the degree course. These required courses are grouped as follows: Home Economics, 40 hours; Professional, 20 hours; Physical Sciences, 12 hours; Biology, 10 hours; English, 7 hours; History, 8 hours; Drawing, 6 hours; Physical Education, 4 hours; Electives, 17 hours.

Courses numbered from 1 to 50 are open to freshmen and sophomores. Those numbered from 51 to 100 are open to juniors and seniors. Any variation from the above will be upon the recommendation of the head of the department.

Home Economics. Degree, 40 hours; life certificate, 24 hours. This course is so arranged that a life certificate in home economics is granted upon the completion of the first two years of work.

THE COURSES.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Foods 1	3	Foods 2	3
Clothing 1	3	Clothing 2	3
Chemistry 1	5	Drawing 5*a*	2
English 1	4	Biology 11 (Physiology)	4
Physical Education 1	1	Psychology 7	3
		Physical Education 2	1
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Foods 3	1	Foods 5*a*	2
Clothing 3	2	Foods 5*b*	3
*Methods 4 and 5	3	Clothing 6	4
Principles of Education	3	*Practice Teaching 6	3
Organic Chemistry	3	Bacteriology 16	4
Drawing 25	2		
Sociology	2		
	16		16

JUNIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Home Economics major	4	Home Economics major	4
*Home Economics Education 61	3	Household Management 52	2
Biology 53	2	Chemistry 60 or 62	4
Industrial History	3	Drawing 50	2
Physical Education	1	Physical Education	1
Electives	2	Electives	2
	15		15

SENIOR YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Household Administration 60	4	Home Economics major	2
*Home Economics Education 62	3	*Home Economics Education 63, or General Education	2
English or Public Speaking 51	3	Sociology	3
Electives	5	Electives	8
	15		15

DESCRIPTION OF COURSES.

FOODS AND NUTRITION.

Course 1. ELEMENTS OF COOKERY. This course is planned for students who have not had a course in food preparation in high school. It develops skill in the technique of cookery, and takes up a thorough study of foods; kinds, growth, preparation for market, composition, digestibility and fuel value. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 2. FOODS AND COOKERY. This is a continuation of course 1. The two courses cover a study of beverages, cereals, vegetables, batters and dough, meats and poultry, fish, eggs, milk, and cheese. Following this scientific study of foods, preliminary work in serving and making menus is taken up. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 1*a*. TECHNOLOGY OF COOKERY. Courses 1*a* and 2*a* are planned for those students who have had the equivalent of a good two-year high-school course in foods and cookery. It deals with the more difficult problems of the technique of cookery and with the principles underlying the cookery of all types of foods. Much time is spent on efforts to give the students the viewpoint of a teacher of cookery. The student's work during these courses will give a content sufficient for a teacher's background in foods and cookery and the best methods of presenting the work in elementary and secondary schools. Three hours credit. A fee is charged to cover materials used in laboratory.

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* These courses are taught in the Home Economics Department, but count as Education.

Course 3. PRESERVATION OF FOODS. This course includes the study of food preservation. Canning and preserving of fruits, jellies, conserves, marmalades and pickling, canning of vegetables. One hour credit. A fee is charged to cover materials used in laboratory.

Course 5*a*. HOME COOKERY AND TABLE SERVICE. The purpose of this course is to give opportunity for practice in home cookery, fancy cookery, and the serving of both formal and informal meals. Two hours credit. A fee is charged to cover materials used in laboratory.

Course 5*b*. ELEMENTARY NUTRITION. This course describes very simply the essentials of an adequate diet and the nutritive properties of common food materials. The application of such knowledge to the feeding of individuals and family groups is discussed with special reference to limitations of cost. Three hours credit.

Course 51. EXPERIMENTAL COOKERY. This is a quantitative study of cooking processes, comparative study of recipes, and the cost of materials involved. Relative values of various food products common in the present-day markets. Work in demonstrations will be given along with this course. Two hours credit. A fee is charged to cover materials used in laboratory.

Course 53. DIETETICS AND NUTRITION. The course deals with the biological analysis of foodstuffs and presents the application of the fundamental principles of human nutrition under varying physiological, social and economic conditions. Quantitative and qualitative studies of food values are made. Four hours credit.

Course 55. DEMONSTRATION. This course offers a study of cookery demonstration, and equips the student to give instructive demonstrations. The aim of this course is to fit the teacher to do community work, as well as classroom work. Two hours credit. Fee charged to cover materials used in laboratory.

Course A. COOKERY. This course is planned for students not majoring in home economics. The course is purely practical and includes the preparation of vegetables, fruits, cereals, meat, eggs, bread, cakes and pastry; also work in canning and preserving. Attention is given to food combinations, place in the menu, and cost. One hour credit. A fee is charged to cover materials used in laboratory.

TEXTILES AND CLOTHING.

Course 1. SEWING AND GARMENT MAKING. This is primarily a teacher-training course designed to teach the fundamental elements of sewing to develop technique, to present suitable problems in single garment construction and methods of teaching such problems; and to develop a sense of comparative values in materials, labor and time. A fee is charged. Three hours credit.

Course 2. This is a continuation of course 1. Greater emphasis is placed on developing a freer use of commercial patterns by alterations and on the principles of fitting and good lines. The garments made in the laboratory are a middy, tailored skirt and tailored linen or cotton dress. A laboratory fee is charged. Three hours credit.

Course 1*a*. TECHNOLOGY OF SEWING. This course is planned for those who have had one or more years of sewing in the high school. It deals with the more difficult problems of the technique of sewing. Considerable time is spent in efforts to give the students the viewpoint of the teacher of sewing, also the best methods of presenting the work of elementary and secondary schools. Three hours credit.

Course 3. **TEXTILES.** This course deals with the elementary problems of textiles and is planned for life-certificate students. Some attention is given to manufacturing methods as a basis for the following work of the course, but emphasis is placed upon the study of standard materials, budgets, the care and the hygiene of the clothing. A laboratory fee is charged. Two hours credit.

Course 6. **DRESSMAKING.** Commercial patterns, the proportions of the human form, the application of the principles of design and color to the gown, and the finishing of waists and gowns are studied in this course. The projects are a waist, a woolen or worsted dress, and a graduation gown. A fee is charged to cover material used in laboratory. Four hours credit.

Course 7. **NEEDLECRAFT.** This course is a study of different types of stitches in conjunction with their most appropriate use in definite problems. Original designs are developed in harmony with material and technique. Fine examples are studied for the development of taste. Two hours credit.

Course 51. **CHILDREN'S CLOTHING.** This course includes the planning, purchasing and making of children's clothing, considering hygiene, comfort, beauty and practicability. In the laboratory, special emphasis is placed upon machine work, use of machine attachments, short cuts and easy decorative schemes. A laboratory fee is charged. Two hours credit.

Course 52. **ADVANCED DRESSMAKING.** This course deals with the characteristic use of silks and velvets. The projects are an afternoon gown and an evening gown. A fee is charged to cover materials used in laboratory. Four hours credit.

Course 53. **ADVANCED TEXTILES.** This course presents the foundation principles of the textile industry, special emphasis being placed upon early methods as an interpretation of the present methods of manufacture. The student is prepared to present this work in a graphic way and to become an intelligent judge of the quality and suitability of the various fabrics used for personal and household purposes. A fee is charged to cover the materials used in laboratory. Two hours credit.

Course 54. **MILLINERY.** This course deals with the selection of materials, the making and covering of frames, the fitting and trimming of hats, the making of flowers, and the renovating of millinery materials. Emphasis is placed upon the proper selection of hats, and their suitability to the wearer and the occasions for which they are intended. A fee is charged to cover material used in laboratory. Three hours credit.

Course A. **MILLINERY.** This course is elective to students not registered in the Home Economics department, and aims to teach some of the elementary principles of millinery. Buckram frames are prepared, and seasonable hats with trimming are made. A fee is charged to cover materials used in laboratory. Two hours credit.

HOUSEHOLD AND INSTITUTION MANAGEMENT.

Course 9. **HOUSEWIFERY.** This course treats of kinds of service needed in various parts of the household, and the systematic planning of the daily routine; labor-saving appliances; repairing and renovation; household efficiency with reference to housekeeping methods. Two hours credit.

Course 52. **HOUSEHOLD MANAGEMENT.** General management of the home is studied in this course. Care of the house; values in furnishings; investigations and discussion which will secure an intelligent judgment of expenditures involved in housekeeping: rent, fuel, light, water, furniture, and the cost of living; sanitation and the prevention and removal of unsanitary conditions. Two hours credit.

Course 58. INSTITUTION COOKERY. This course is made up of lectures, conferences, observations and practice. The practice work consists of the preparation of food in large quantities, catering for entertainments, school lunches and banquets. A study is made of room plans, equipment, arrangement of menus, problems in connection with the serving of food, employees, food economics, and waste control, and the purchase of food in large quantities. Visits are made to local institutions, such as hotels and hospitals. This course is given in the college cafeteria. Three hours credit.

Course 59. LUNCH-ROOM MANAGEMENT. This is a course for students who wish to prepare for lunch-room management. A study is made of the principles of scientific management and their application to lunch rooms; charting, time and motion studies, standardization of equipment and processes, making of schedules for employees, score cards, record keeping, etc. A trip to Kansas City for the purpose of visiting and inspecting various types of lunch rooms, wholesale houses, etc., is advised. Two hours credit.

Course 60. HOUSEHOLD ADMINISTRATION. From six to ten weeks experience as manager and helper in a household of senior students. Four hours credit.

HOME ECONOMICS EDUCATION.

Course 4 and 5. METHODS. This is a special course dealing with administrative problems connected with home economics subjects in the public schools. The course includes the making of courses of study throughout the grades and high school, cost and planning of equipment, the correlation of these subjects with other subjects, educative value courses and disciplinary problems. Three hours credit.

Course 6. SUPERVISED TEACHING IN HOME ECONOMICS IN THE JUNIOR HIGH SCHOOL. Three hours credit.

Course 7. HOME ECONOMICS FOR RURAL SCHOOL AND GRADE TEACHERS. This course is planned for rural school and grade teachers and has for its aim the possibilities of instruction in this type in schools where the work has not been developed as distinct from other subjects in the curriculum. Three hours credit.

Course 8. FOOD HYGIENE FOR RURAL SCHOOL AND GRADE TEACHERS. This course emphasizes health teaching through such methods as weighing, measuring, charting, health reports, daily inspection and school lunches. Courses of study that appeal to children's natural interests through group competition, game spirit and self-expression to establish fundamental health and food habits will be developed. Three hours credit.

Course 51. FOOD HYGIENE EDUCATION. This course deals with the application of home economics in relation to health education. It includes a survey of modern methods to interest pupils and teachers in health work, to correlate nutrition with academics and vocational subjects and to secure coöperation of all agencies (Public Health Associations, School and Visiting Nurses, and Parent-Teachers' Associations, etc.) to develop and maintain health standards. Three hours credit.

Course 61. METHODS IN SECONDARY VOCATIONAL HOME ECONOMICS. This course considers the relation of home economics to education; the methods of teaching; relation to high-school curriculum; the planning of lessons and courses of study suitable to the methods and purpose of vocational home economics; studies and experiments with materials and subjects leading to operations involving household occupations in preparation for organization of project work. Three hours credit.

Course 62. **Supervised Teaching.** Practice in planning and presenting of courses, conferences and critiques. Three hours credit.

Course 63. **Seminar in Home Economics Education.** This course includes the study of problems in administration, organization, materials and equipment. Two hours credit.

Course 64. **Organization of Teacher Training in Home Economics.** A consideration of the problems in organization of Home Economics for all-day, part-time, and evening classes; curricula, courses of study, and preparation of teachers for the various types of school will be treated. Two hours credit.

Course 65. **Administration and Supervision of Vocational Home Economics.** This course is planned to meet the needs of supervisors of Home Economics. The topics treated are legislation, types of schools, supervisory plans and courses of study. Two hours credit.

Course 66. **History of the Family.** This course includes the history of the family from early ages to the present time; the industrial revolution and its effects upon family life, and an examination of the present situation and tendencies as they affect the life of the American family. Three hours credit.

Course 67. **Education of Women.** Woman's work and her industrial and economic conditions are studied with reference to the home and society. Opening of occupations and professions to women; a study of modern problems of woman and the home, suffrage, education, economic function of woman and the family. Two hours credit.

RELATED ART.

Course 5*a*. **Principles of Design.** The study of the principles of design, with studio practice in the structure of pattern, space filling, and the use of color and value. The application in design is directly related to definite problems. Two hours credit.

Course 5*b*. **Design.** This course is for students who wish to continue the study of design. The application in design is directly related to definite problems in various mediums such as batik dyeing, wood block printing, stenciling, etc. Two hours credit.

Course 24. **Home Furnishing.** In this course the decorative phase of design is studied in relation to the repairing, refinishing and upholstering of furniture, and the making of things useful and beautiful out of simple materials and materials frequently wasted. Two hours credit.

Course 25. **Interior Decoration.** This is the study of the principles of design and color in relation to the arrangement and furnishing of a home. A study is made of the history of furnishing so that the student may learn what is good in design and color, for the development of taste in selection. Two hours credit.

Course 51. **Household Architecture.** Is the designing and planning of the small modern house. Drawings are made of floor plans, front and side elevations, and a perspective sketch to show artistic planting. Original designs and working drawings are made for built-in furniture and other conveniences. A special study is made of laboratory equipment and its arrangement. This course is not designed to prepare people as professional architects. Two hours credit.

Course 52. HISTORY OF FURNITURE. This course is to help the student to understand the history of furniture through the important period styles, so that he may the more easily make selections from designs on the market with an appreciation of modern requirements. One hour credit.

Course 53. HISTORY OF COSTUME. This course is to help the student appreciate the history of costume and its relation to the development of modern designs. One hour credit.

Course 56. COSTUME DESIGN. The study of the rhythm and grace of line in the figure and costume. Costumes and colors for different types and complexions. Color and texture combinations in various materials. Sketching from gowns, hats and original designs. Lectures and studio practice. Two hours credit.

BIOLOGICAL SCIENCES.

O. P. DELLINGER Professor.
ELIZABETH FLEESON, Assistant Professor.

Course 11. HUMAN PHYSIOLOGY. The purpose of this course is to teach those things that will enable the student to make of his or her body, and also the bodies of those they minister to, the most efficient mechanism possible. The requirements of the body as to food, exercise, sleep, fresh air, bathing, etc. The physiological requirements of children, where they differ from the adult, will be emphasized. The physiology of reproduction will receive the attention it deserves. Daily for twenty weeks. Four hours credit. Laboratory fee for material used.

Course 16. GENERAL BACTERIOLOGY. This course is required of all students who major in domestic science or agriculture, and is open to any student in the college course. It is a general introductory course consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit. Fall, spring and summer terms. Laboratory fee for material used.

Course 53. GENETICS. The course is especially designed for domestic science students, but is open to all students of college grade. A careful review of the literature on heredity and eugenics is given, together with a study of the law of reproduction. Two hours or four hours credit.

For electives in this department see section II, page 52.

CHEMICAL AND PHYSICAL SCIENCES.

J. A. YATES, Professor.
F. J. DOBROVOLNY, Associate Professor of Chemistry.
MARGARET COVENTRY, Assistant Professor of Chemistry.

Course 1. GENERAL CHEMISTRY. This course consists of lectures, recitations and laboratory work upon the fundamental principles of this science, together with the application of chemistry to the various arts and industries. Among the practical subjects considered are chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils and varnishes, water, air, fuels, and the elementary principles of chemistry in food preparation and other operations in the home. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. This course is not open to students offering elementary chemistry for admission. Laboratory fee for material used. Five hours credit.

Course 51. ORGANIC CHEMISTRY. A general course in organic chemistry, including lectures, recitations and laboratory work. This course emphasizes the properties and uses of the organic compounds found in our industrial activities, together with the underlying chemical principles involved. Prerequisite, Chemistry 1. Laboratory fee for material used. Three hours credit.

Course 60. TEXTILE CHEMISTRY. This course deals with the chemical examination and identification of the different textiles, and a brief study of dyeing. Prerequisite, Chemistry 1. Laboratory fee for material used. Four hours credit.

Course 62. PHYSIOLOGICAL CHEMISTRY. This course consists of a study of the chemical changes involved in the cooking, digestion and absorption of foods; the chemistry of the blood and tissues of the body. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Laboratory fee for material used. Four hours credit.

EDUCATION.

D. M. BOWEN, Professor.
FRANK DEERWESTER, ————.
EDGAR MENDENHALL, ————.

Course 7. GENERAL PSYCHOLOGY. The purpose of this course is to give the students a working knowledge of the accepted facts and general principles of psychology. In order to give a fair representation of the science as a whole, the descriptive, structural and dynamic phases of psychology are discussed. The point of view is on the whole functional, more attention being paid to what the mind does than to what it is. Discussions, outlines, readings, reports and simple experiments. Offered each semester. Three hours credit. Prerequisite for all other courses.

Course 9. PRINCIPLES OF EDUCATION. A course in the art of teaching, based principally upon the science of psychology. A discussion of the principles of psychology which are involved in teaching and their application in the work of the classroom, laboratory and shops. The following problems are analyzed and discussed, showing the interdependence of the various aspects of teaching method and the unity involved in mental development; attention and interest; the formation of habits; memory and the principles of memorizing; imagination, its development and use; thinking and reasoning; transfer of training; types of classroom exercises; how to study; individual differences. General psychology a prerequisite. Three hours credit.

For electives in this department see section II, page 65.

ENGLISH.

ERMINE OWEN, Professor of English.

Course 1. CONSTRUCTIVE ENGLISH. The formal side of English, both written and spoken. A study of the paragraph, of sentence forms, of punctuation, letter writing and formal notes. The entire course correlated with a study of American Classics and the late war literature. Four hours credit. Open to freshmen.

For electives in this department see section II, page 70.

PUBLIC SPEAKING.

JOHN R. PELSMA, Professor of Public Speaking.

Course 51. ADVANCED PUBLIC SPEAKING. A course in reading and speaking for advanced students, who have had some experience in public speaking and who desire a survey of principles with constructive criticism. Oral interpretation of literary masterpieces and construction and delivery of original speeches extempore. Vocal defects—diagnosis and treatment. Criteria for judging contests. Training contestants, etc. Three hours credit.

HISTORY AND SOCIAL SCIENCES.

G. W. TROUT, Professor of History and Social Science.
O. F. GRUBBS, ————.

Course 51. INDUSTRIAL HISTORY. A careful study of our natural resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to the present time. Besides the use of a text the students are required to prepare papers and read them before the class for discussion. Offered three hours per week during second semester of sophomore or junior year, college course. Three hours credit.

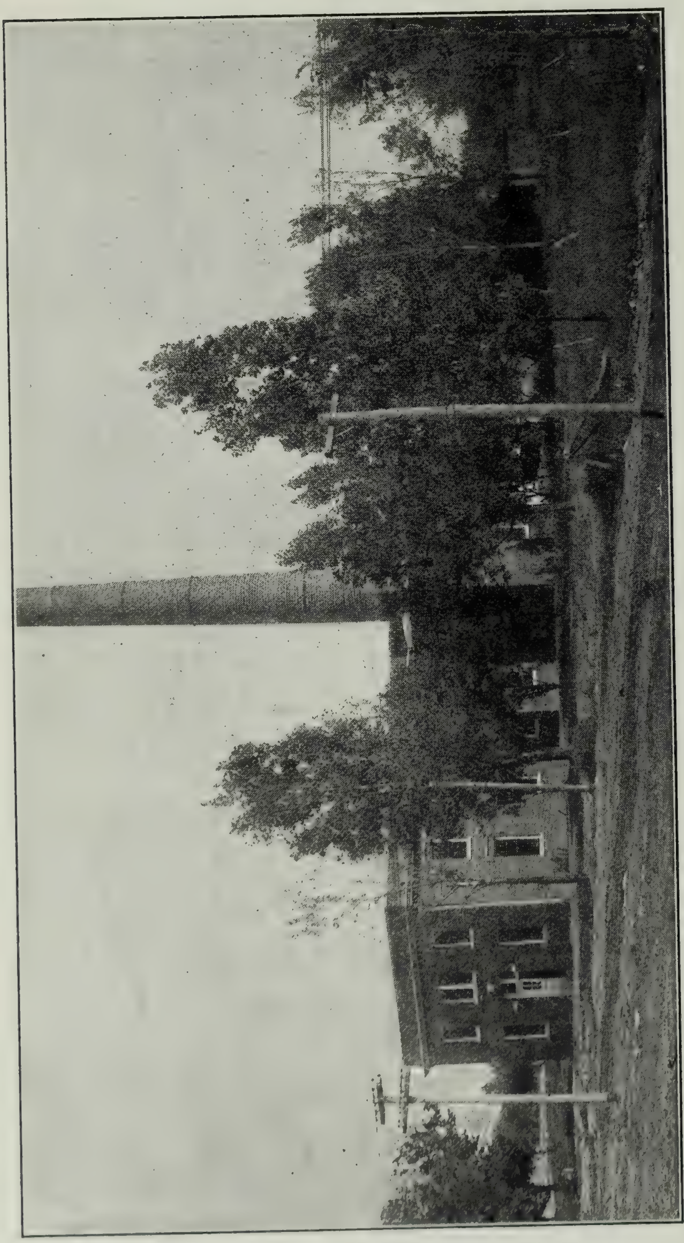
Course 18. SOCIOLOGY. An introductory study of the nature, function and development or progress of society. The aim is to familiarize the student with society and some of its problems and cultivate a desire to aid in the solution of these problems. Three hours credit.

Course 59. APPLIED SOCIOLOGY. In this course we endeavor to apply the principles of sociology to present-day problems. Course 58 is a prerequisite. Offered two hours per week during second semester of the senior year, college course. Two hours credit.

For electives in this department see section II, pages 71.

SECTION VI.

Engineering and Technical Courses.



POWER PLANT.

THE FACULTY.

W. A. **Brandenburg**, Ph. B., President.

J. A. **Yates**, B. S., M. S., Director of Electrical and Mining Engineering and Professor of Chemical and Physical Sciences.

J. A. G. **Shirk**, A. M., M. S., Director of Civil and Mechanical Engineering and Professor of Mathematics and Applied Mechanics.

Ermine Owen, M. A., Professor of English.

S. J. **Pease**, M. A., Professor of Languages.

G. W. **Weede**, B. S., D. D. S., Director of Physical Education for Men.

C. O. **Van Dyke**, M. A., Associate Professor of Mathematics.

George V. **Emery**, A. B., Associate Professor of Physics.

A. T. **Dunham**, B. S. in Min. Eng., B. Met., Associate Professor of Mining Engineering.

L. E. **Curfman**, B. S. in C. E., Associate Professor of Civil Engineering.

F. H. **Dickinson**, Assistant Professor of Industrial Arts.

Ernest Bennett, B. S., Assistant Professor of Languages.

Wm. H. **Matthews**, B. S., Assistant Professor of Physics.

C. F. **Kopp**, B. S. in E. E., Assistant Professor of Industrial Arts.

R. W. **Erskine**, Assistant Professor of Industrial Arts.

F. J. **Dobrovolny**, A. B., Assistant Professor of Chemistry.

J. B. **Quig**, B. S. in Chem., Assistant Professor of Chemistry.

E. W. **Jones**, B. S. in E. E., Assistant Professor of Electrical Engineering.

__________, Assistant Professor of Electrical Engineering.

__________, Assistant Professor of Mechanical Engineering.

Jack Doty, Laboratory Assistant in Applied Mechanics.

Leo Hudiburg, Assistant in the Electrical Laboratory.

Paul J. **Alyea**, Assistant Director of Physical Education for Men.

ORGANIZATION AND PURPOSE.

The introduction of technical instruction into the curriculum of this institution was brought about by the insistent demand for training made by the men working in the mines and industrial plants of this region. As early as 1910 night classes in the elements of mining were organized for the miners. These classes were attended by large numbers of men, and demonstrated very clearly the great need for practical instruction. In 1912 night classes in applied electricity were started and these classes also were well attended by men engaged in the various electrical industries. Instruction in other lines was added as rapidly as the facilities of the institution permitted. Many young men attending the regular school work began to take advantage of the practical instruction originally planned for the training of teachers of industrial arts, physical sciences, and mathematics. These courses have been gradually developed into the engineering courses now being offered by this institution.

There are three groups of students at present enrolled in the engineering courses. First, those high-school graduates desiring to take a four-year engineering course leading to a degree in some type of engineering. Second, those high-school graduates and advanced practical engineers who feel that they cannot spend four years in securing a technical education, and who therefore desire to take a shorter course in which as much practical work as possible has been introduced. This has been accomplished by reducing to the minimum the general courses in mathematics, physics, chemistry, and other preparatory engineering subjects. The third group is composed of men who have had a limited educational training, having generally never attended a high school, but who desire to advance to better positions in their particular vocations. These men take the vocational courses for miners, stationary engineers, or electricians. These courses can be finished by the industrious student in one year, and the training secured from the completion of one of them will be very valuable in entering the occupation for which the course is designed, or for taking up more advanced work in the Industrial Engineering courses.

These two-year Industrial Engineering courses are intended for the second group of students previously mentioned, and a complete description of them is given in the following pages.

The students of the first group should select regular college courses which correspond in subject material and credit to the freshman and sophomore courses of the engineering school in which they are expecting to complete their technical education. Under an agreement with the University of Kansas formulated in 1915, students of this institution are awarded full credit, hour for hour, for courses of collegiate grade which correspond to the University courses. This means that students will receive full credit for the regular course in mathematics, physics, chemistry, elementary geology, mechanical drawing, shop work, elementary surveying, elementary steam power plants, foreign languages, and English. In this manner, by selecting the proper studies it will be found possible for students to cover two full years of the professional engineering courses at the University, and be able to complete these courses and secure an engineering degree in two years more.

The spirit of the Faculty and student body of this institution cannot be excelled in the coöperation and enthusiasm manifested in every phase of school life. Every young man who spends a part of his school days here will carry away with him high ideals of performing faithfully his part in life's activities.

THE ENGINEERING SOCIETY.

The Engineering Society is composed of those students who are taking technical work in this institution with a purpose of becoming practical engineers, and those instructors who are engaged in teaching this type of work. Monthly meetings are held, and the programs include reports on current engineering topics by instructors and students, reports of scientific meetings and associations, lectures by prominent engineers and business men connected with industrial organizations. The membership also comprises many students who are specializing in Mathematics and Physical Science for the purpose of becoming teachers, and who wish to get into close contact with the practical applications of their special subjects. This organization is serving a valuable purpose in linking closely together the practical engineers with those teachers who are teaching work directly related to practical vocations.

THE LIBRARY.

All students have access to the school library, in which will be found a collection of trade and technical periodicals and reference works of especial value to those engaged in industrial pursuits.

EQUIPMENT.

The institution possesses sufficient apparatus of a technical nature to offer up-to-date instruction in each of the courses named. This is constantly being added to in order that it may more completely meet the needs of the classes. The shops and drafting rooms are large and well equipped for such shop work as is required, and the laboratories contain much material specially purchased for practical instruction. The aim of the mathematics and science departments has always been to emphasize the practical side of their courses; accordingly their equipment has been selected for the value it may possess in teaching the applications of the theoretical principles discussed in the classrooms.

INDUSTRIAL ENGINEERING COURSES.

This institution offers courses in civil, electrical, mechanical and mining engineering for those who are ambitious to fill positions above the grade of skilled mechanics in mines and manufacturing and industrial plants. A superintendent or manager must have a more thorough training in the theoretical side of the subject. This must be preceded by a more extensive course in mathematics and science than is necessary for trade instruction.

The completion of a full high-school course is recommended for entrance to these courses, but men who have the advantage of extensive practical experience along the line of the course that they wish to enter will generally find that their preparation is sufficient.

The courses are designed for two years' work for industrious and capable students. A diploma is granted to those who complete satisfactorily any of the two-year courses.

INDUSTRIAL CIVIL ENGINEERING.

Civil engineering has to do with planning, locating, and construction of public works such as bridges, railroads, hydraulic plants; with municipal improvements such as sewer systems, paving, drainage, parks, and waterworks; and with the measuring and mapping of lines both on the surface of the ground and beneath the surface. This latter type of work is known as mine surveying, and the course as outlined covers the essentials of this type of surveying. Civil engineering includes several different classes of work, and the purpose of the course offered at this institution is to get acquainted with the elements of the main types of work so that the student may make a wise selection of the field in which he wishes to specialize.

INDUSTRIAL ELECTRICAL ENGINEERING COURSE.

Electrical engineering, as is indicated by the name, has to do with the study of electricity and the different electrical machines and appliances that utilize this important force; in a word, the generation and utilization of this wonderful power. Practically every line of mechanical work employs electricity in some way. The purpose of this course is to thoroughly acquaint the student with the installation, care and repair of the different lines of electrical machinery and appliances. Never in the world's history has electricity played so large a part in the world's work as to-day, and this practical course is planned to train those who complete it to understand and to be able to fill positions in the various lines of electrical work. The practical side of the work is stressed in this course, and is intended to prepare those who wish to enter electrical industries.

INDUSTRIAL MECHANICAL ENGINEERING COURSE.

Mechanical engineering embraces the design, construction and operation of machinery. The many new inventions make the mechanical engineer a factor of growing importance in the world's work. In order to become efficient in this vocation, a foundation of mathematics, science, and drafting must be obtained. In addition to these subjects, which enable the student to think correctly and express his ideas by means of drawings, a definite training along some special lines of machinery must be secured. Generally steam engineering is the more important type of mechanical engineering because of the universal use of steam machinery and refrigerating machinery. All of these subjects are included in the course as outlined, giving the student an appreciation of the relation of the various kinds of machinery whose operation is under the charge of mechanical engineers.

INDUSTRIAL MINING ENGINEERING COURSE.

This course is intended to prepare those who take it with a practical working knowledge of the different positions necessary for the operation of this important industry. Our mines furnish the materials which are absolutely essential to the operation of our manufacturing industries. Without coal our machines for manufacturing and transportation must lie idle; in fact, without coal and other mining products we would have no machinery. The mining industry is considered a very hazardous one, and the purpose of this short, practical course is to so acquaint those who are to have charge of the work, with the science involved, that many of the hazards or accidents which too often occur in and around our mines may be removed. The location of this institution, in the center of the great coal field of our state, gives an ideal opportunity for the student to study at first hand the operation of coal mines. The lead and zinc mines of our state are also located near the institution, and are connected by trolly with the city of Pittsburg. The student may, with little expense to himself, visit and study both the coal and metal mines of our state.

On the campus is located the building of the central mine rescue station in which are the offices of the State Mine Inspector and Mine Rescue Superintendent. Through the work of these officers opportunity is given the student in mining to get information in a practical way involved in the operation of mines. The equipment of the chemical and electrical laboratories has been selected with the idea of its use in the operation of mines as well as in other industrial work. The student will find a nucleus of a geological museum in which are specimens of especial interest to mining students.

INDUSTRIAL CIVIL ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Industrial Mathematics	3	Higher Surveying	3
Plane Trigonometry	2	Mine Surveying	1
Elementary Surveying	3	Strength of Materials	2
Mechanics and Heat	4	Chemistry 1	5
Mechanical Drawing	2	Machine Drawing	2
Cement Laboratory	1	Electric Wiring	2
Physical Education 1	1	Physical Education 2	1
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Railway Surveying	2	Sewers	2
Hydraulics	2	Masonry	2
Graphic Statics	3	Water Supply	2
Roads and Pavements	3	Electricity and Magnetism	4
Elementary Steam Power Plants	3	Geology	3
Mine, Gases and Ventilation	2	Reënforced Concrete	2
Drainage	1	Technical Report	1
	16		16

INDUSTRIAL ELECTRICAL ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Industrial Mathematics	3	Plane Trigonometry	2
Gas Engines	3	Electric Wiring	3
Forging and Elementary Machine Shop	2	Electricity and Magnetism	4
Mechanical Drawing	2	General Machine Shop	2
Chemistry 1	5	Machine Drawing	2
Physical Education 1	1	Strength of Materials	2
		Physical Education 2	1
	16		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Mechanics and Heat	4	Gas Engine Electricity	3
Electrical Measurements	3	Illumination	2
Mechanism	2	A. C. Machinery	4
Armature Winding	2	Elementary Surveying	3
D. C. Machinery	2	Contracts and Specifications	2
Electrical Installations	3	Storage Batteries	2
		Technical Report	1
	16		17

INDUSTRIAL MECHANICAL ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Industrial Mathematics	3	Strength of Materials	2
Plane Trigonometry	2	Electricity and Magnetism	4
Mechanics and Heat	4	Chemistry 1	5
Gas Engines	3	Forging and Elementary Machine Shop	2
Pattern Making and Foundry	2	Machine Drawing	2
Mechanical Drawing	2	Physical Education 2	1
Physical Education 1	1		
	17		16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Elementary Steam Power Plants	3	Steam Turbines	2
Mechanism	2	Hydraulic Machinery	2
Graphic Statics	3	Refrigeration	2
D. C. Machinery	2	A. C. Machinery	4
Hydraulics	2	Advanced Machine Shop	2
General Machine Shop	2	Reënforced Concrete	2
Electric Wiring	2	Masonry	2
		Technical Report	1
	16		17

INDUSTRIAL MINING ENGINEERING COURSE.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Industrial Mathematics	3	Plane Trigonometry	2
Gas Engines	3	Quantitative Analysis	3
Carpentry	2	Explosives	2
Mechanical Drawing	2	Electric Wiring	2
Chemistry 1	5	Strength of Materials	2
Physcial Education 1	1	Forging and Elementary Machine Shop	2
	16	Machine Drawing	2
		Physical Education 2	1
			16

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Elements of Mining	3	Mining Engineering	2
Coal Mining	3	Mine Surveying	1
Mine Gases and Ventilation	2	Electricity and Magnetism	4
Mineralogy	2	Geology	3
Elementary Steam Power Plants	3	Mine Equipment	2
Quantitative Analysis	1	Contracts and Specifications	2
Elementary Surveying	3	Technical Report	1
	17		15

DEPARTMENT OF CHEMICAL AND PHYSICAL SCIENCES.

J. A. Yates, Professor.
G. V. Emery, Associate Professor.
A. T. Dunham, Associate Professor.
W. H. Matthews, Assistant Professor.
F. T. Dobrovolny, Assistant Professor.
E. W. Jones, Assistant Professor.
J. B. Quig, Assistant Professor.
Leo Hudiburg, Assistant in Electrical Laboratory.

This department directs the work of the industrial electrical engineering course and industrial mining engineering course. It offers the larger part of the work required in these courses, also much of the work required in the other engineering courses. The department also directs the vocational courses for electricians, miners, and telegraphers, since the work required of these courses is so closely connected with like engineering courses. These courses are the outgrowth of the different practical courses given in chemistry, geology and physics, supplemented with like work given by other departments of the institution.

The location of the institution, at the center of the mining and other industrial activities of Kansas, offers many opportunities for those who complete these practical courses to become acquainted with the employers, and thus secure positions in the mines and electrical industries of our state. The students will be taken on inspection trips, which will enable them to study the different phases of the work which they will be required to do in actual practice. The practical side of the work is stressed, so that the student is enabled to connect the work which he is called upon to do in the classroom with its application in industrial work. The use of electricity is constantly increasing, on account of its cheapness and convenience, thus causing an increasing demand for electrical workers. Students are helped and urged to secure positions along the line of their work during vacations, so that they get experience in the profession they are to follow. The proper installation, care and repair of electrical machinery and electrical appliances, which are being so universally used in all our industrial activities, demand skilled men who know the "why" and "how" in this line of work. The idea in each course is to bring to the worker the best ideas and the most economical way that is known by which his task may be accomplished. Stress is placed upon acquiring the ability to do a job quickly, thoroughly, and in a scientific way.

CHEMISTRY.

Course 1. CHEMISTRY. In this course the student becomes acquainted with the different materials and elements that are used in every industry. He studies the principles involved in the transformation of the different substances with which he works. Applications of the principles of this fundamental science in all phases of work are stressed. Due emphasis is placed upon the applications of these principles to the different lines of trade or profession in which the student is engaged. Subjects included in this course are the gases, as oxygen, nitrogen, carbon dioxide, together with a description of the common metals, how they rust, protection of same; in a word, the chemical processes involved in converting raw material into finished products. Other subjects, as the study of acids, oils, paints, salts, etc., will be considered in a practical way in this course. Laboratory fee for material used. Five hours credit.

Course 2. INORGANIC CHEMISTRY. This course is built upon a course in elementary chemistry, and consists of lectures and recitations upon the more difficult principles involved in general chemistry, including such subjects as gas laws, the solution of chemical examples, nomenclature, principles of solution, etc. The application of chemistry to the varied needs of man is emphasized. Laboratory fee for material used. Four or five hours credit.

Course 3. QUALITATIVE ANALYSIS. This course consists largely of laboratory work. Emphasis is placed upon the identification and separation of the metallic and non-metallic ions. Lectures and recitations upon the principles involved in chemical analysis are given. Pre-requisite, Chemistry 1. Laboratory fee for material used. Three or five hours credit.

Course 4. QUANTITATIVE ANALYSIS. This is principally a laboratory course, including both gravimetric and volumetric analysis, supplemented by lectures and recitations. The calibration of glassware and the study of the relation of chemistry to other sciences, along with the various vocations of life, are included in this course. Prerequisite, Chemistry 3. Laboratory fee for material used. Three or five hours credit.

Course 16. ELEMENTS OF MINING. This is a general course involving the principles which are employed in prospecting, location and sinking a shaft, cribbing, timbering, lighting, shot firing, underground methods of working both metal and coal mines. Three hours credit.

Course 17. COAL MINING. This course includes a careful study of ventilation, haulage, and machinery used in coal mining. Three hours credit.

Course 18. MINE GASES AND VENTILATION. A beginning course in the study of gases found in mines. The properties and tests for these gases will be thoroughly studied. These gases will be prepared in the classroom and various tests for them made. The safety lamp will be thoroughly studied and its use in testing for the gases found in the mine. The origin and removal of the gases will receive attention. No effort will be spared in teaching the students in this course the practical side of this work. In ventilation the student will be taught how to get the necessary data and how to find the quantity of air in a mine, how to keep the quality of the air supply in the mine in proper healthful condition, also how to make the necessary mesurements and calculations for the proper ventilation of mines. Two hours credit.

Course 19. EXPLOSIVES. This course deals with the explosives used in mining, their proper care and attention. The chemistry of explosives is studied in a practical way; also the causes that lead to explosions and how these accidents may be avoided is carefully considered. In all these courses opportunity will be given for questions and discussions in order to find the best way to do the work in hand, and also to avoid accidents. The different methods of mining will receive their share of attention. Two hours credit.

Course 20. MINING ENGINEERING. This course includes a study of the geological conditions affecting mine operations, making and reading mine maps, a study of the problems that arise in selecting the power to be used in mining, also the problems involved in transportation and operation of the mine. Two hours credit.

Course 51. ORGANIC CHEMISTRY. A general course in organic chemistry, including lectures, recitations and laboratory work. This course emphasizes the properties and uses of the organic compounds found in our industrial activities, together with the underlying chemical principles involved. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

Course 52. PHYSICAL CHEMISTRY. This course consists of lectures, recitations, readings and laboratory work. The elementary principles of physical chemistry are studied in this course. Emphasis is placed upon a thorough understanding of the laws involved in general chemistry. The basic nature of these principles to the historical development of chemistry is considered. The aim is to lay a solid foundation for future work in the subject. Prerequisite, Chemistry 1, 2, 3, and 4. Five hours credit.

Course 58. TESTING OF OILS. This course includes the usual chemical tests for the examination of the various fuel and lubricating oils used in our industries. The overpoint, end-point, and flash and fire point, together with viscosity and friction coefficients, are studied. Laboratory fee for material used. Two hours credit.

GEOLOGY.

Course 80. MINERALOGY. This is a brief course in the study of our common rocks and minerals. Easy physical and chemical tests for identification, together with crystal structure, are studied. The relation of the different types of soil and water as found in our state to that of the geological formations is emphasized. Two hours credit.

Course 81. GEOLOGY. This course includes the study of the natural materials that are used in various industrial activities, their identification, manufacture and use. Such subjects as the distribution and supply of fuel and road-building materials are studied in this course. Three hours credit.

PHYSICS.

Course 21. GENERAL PHYSICS. Designed for those who wish a brief course in college physics and who have not had high-school physics. This course is preparatory to other courses in physics and is required of students who have not had a unit of high-school physics or its equivalent. It includes a rapid survey of all the branches of physics, interspersed with demonstrations and laboratory exercises. Five hours credit.

Course 22. MECHANICS AND HEAT. This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in buildings, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, High-school Physics. Four hours credit.

Course 23. SOUND AND LIGHT. Lectures and laboratory work in the general theory of sound and light. This course with courses 22 and 24 constitute the equivalent of a one-year course in college physics. Prerequisite, course 22. Two hours credit.

Course 24. ELECTRICITY AND MAGNETISM. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynomos, motors, starting equipment, rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, High-school Physics. Four hours credit.

Course 25. MECHANICS, HEAT AND SOUND. Lectures and laboratory on the general principles involved. Forces in structures and machine parts, elasticity and ultimate strength, laws of motion, heat measurements, sound phenomena. Prerequisite, High-school Physics. Five hours credit. (N. B.—Offered summers alternately with course 26.)

Course 26. ELECTRICITY AND LIGHT. Electric and magnetic circuits. Electrical machinery for power, heat and light. Primary and storage batteries. Nature of light. Laws of reflection, refraction, simple lenses and optical instruments. Lectures and laboratory. Prerequisite, High-school Physics. Five hours credit. (N. B.—Offered summers alternately with course 25.)

Course 27. ELECTRICAL MEASUREMENTS. Lectures and laboratory. Includes meter testing; the measurements of temperature coefficient of resistance; specific resistance of copper, iron, aluminum, etc.; the electrolysis measurement of copper; testing of iron for hysteresis and its measurement; the measuring capacity, inductance and earth's magnetic field; telephone line measurements; and wireless equipment measurement. Three hours credit.

Course 28. DIRECT-CURRENT MACHINERY. Lectures and design. The theory of direct-current machine construction. Includes the theory of magnet design, both shunt and series and armature design. Two practical problems are given, one the design of a lifting electro-magnet, and the other the design of a direct-current motor. Two hours credit.

Course 29. ALTERNATING-CURRENT MACHINERY. Lectures, design and laboratory. Advanced alternating-current machinery and alternatingcurent machine design. Some of the higher problems of alternating-current machinery are taken up in this course, such as alternating-current transmission line calculations and inductive interference in alternating-current transmission lines, transfer men regulations, alternating-current generator, voltage regulators, etc.

A problem in the design of an alternating-current machine, either transformer, generator or motor, will be solved. Four hours credit.

Course 30. ILLUMINATION. A practical course in the designing of illumination distribution for all purposes—home, school, business house, and street lighting. It includes a study of the various types of light sources, shades, and reflectors and their adaptability for various classes of service. Prerequisite, course 23. Two hours credit.

Course 35. PLUMBING AND PIPE-FITTING. A study of the fundamental principles of plumbing and pipe-fitting and of modern sanitary appliances for the home. The course includes designs and practice work as well as recitations and lectures. Prerequisite, High-school Physics. Two hours credit.

Course 36. HEATING AND VENTILATION. The principles of operation underlying the various modern systems of heating and ventilation installed in homes and school buildings form the basis of this course. It includes practical problems in the designing of heating and ventilating systems for buildings. Prerequisite, High-school Physics. Two hours credit.

Course 37. ELECTRIC WIRING. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Two or four hours credit.

Course 38. GAS ENGINES. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics, industrial activities, or in automobiles. Laboratory and lectures. Prerequisite, High-school Physics. Three hours credit.

Course 39. GAS ENGINE ELECTRICITY. A companion course to course 38. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, magneto lighting and ignition circuits, and to trouble-hunting in these parts. Prerequisite, High-school Physics. Two hours credit.

Course 40. ARMATURE WINDING. A practical course in the testing and repairing of defective and burned-out electrical machinery. Prerequisite, course 24. Two hours credit.

Course 41. ELECTRIC SIGNS. A practical course in designing and installing electric signs. Prerequisite, High-school Physics. Two hours credit.

Course 42. ELECTRICAL INSTALLATION. The purpose of this course is the careful study of installation of dynamos and switchboards, together with the connection of the generators with the source of power, and the switchboard with its connection with the transmission wires. This is a very important course, dealing not only with the installation of the larger generators, but also the location and operation of motors of different sizes connected therewith. Two, three or five hours credit.

Course 43. STORAGE BATTERIES. The construction and operation of storage batteries is carefully studied. The charging of storage batteries receives special attention. The problems of repair are also considered. Storage batteries are being used more and more in electrical work, and their proper use and repair is of great importance to electrical workers in the fields where batteries are used. Two hours credit.

ELECTRICAL LABORATORY EQUIPMENT.

Number.	
4	0-125 A. C. Weston voltmeters.
1	0-300 A. C. Weston voltmeters.
2	0-75 A. C. Weston voltmeters.
2	0-30 A. C. Weston voltmeters.
1	0-100 A. C. Weston ammeter.
2	0-15 A. C. Weston ammeter.
1	0-5 A. C. Weston ammeter.
1	0-2 A. C. Weston ammeter.
2	0-2.5-25 D. C. Weston ammeter.
1	0-15-3-30 D. C. Weston ammeter.
2	0-3-30-300 D. C. Weston voltmeter.
1	0-10 D. C. Student ammeter-voltmeter.
1	0-7 hot wire ammeter.
2	1-kw. indicating wattmeters.
2	Sangamo induction watthour meters.
2	Wall galvanometers.
6	Table galvanometers.
1	Post-office bridge.
2	Slide wire bridges.
1	Standard inductance.
4	Standard resistance boxes.
2	Standard condensers.
1	Standard cell (Weston Cadmium).
1	Magnetometer.
1	High insulation discharge key.
2	½ H. P. G. E. repulsion induction motors.
1	1 H. P. G. E. 3-phase induction motor.
1	¾ H. P. D. C. Diehl dynamo.
1	10-kw. motor-generator set.
4	Ignition magnetos.
15	D. C. armatures.
2	Bell transformers.
3	Maloney transformers, 1 kw., 220-110 55.
3	Current transformers.
1	1-kw. wireless transformer, 110-10,000 volts.
5	Edison storage batteries.
12	6-volt, 40-ampere-hour lead storage batteries.
8	2-volt lead storage batteries.
2	12-volt lead storage batteries.
1	Starting rheostat for D. C. motor.
1	Oxygen-natural gas lead burning outfit.
1	2-kw. self-exciting A. C. generator.
2	Garage testing sets.
1	Ware meter 15-3,500 meters.
1	Variable condenser .0015 mf.
1	Radio frequency transformer.
1	1 H. P. Weston electric repulsion motor.
1	Oxygen-acetylene lead burning outfit.
5	Gas engines, total 20 H. P.

DRAFTING.

C. F. Kopp, Assistant Professor.

Course 1. Mechanical Drawing. Proficiency in the use of drafting instruments, knowledge of the conventions and methods of drafting-room practice, an understanding of projection and working drawings through the making of a series of working drawings. Lettering exercises, both capitals and lower case. Directions for sharpening the pencil and laying out the sheet. Line conventions; use and care of the ruling pen. Geometrical constructions include lines, angles, polygons, circles and tangents. Orthographic projection study of first and third angles. Projection of line point and solids on planes. Each problem begins with the making of a sketch in pencil and then a penciled working drawing, followed by an inked tracing and a blue print. Two hours credit.

Course 5. Elementary Machine Drawing. A study of standard bolts, nuts, screws, keys and pins with their standard conventions. Use of tables and machinist and engineer hand books. Drawing of machine parts such as hand wheels, eccentric sheave, engine crank, connecting rod end, crane hook, clutch coupling, piston rod stuffing box, etc. Execution of working sketch of casting on regular cross-section paper, followed by working, tracing and blue print.

Study of cam motions and simple elementary gearing. Prerequisite, course 1. Two hours credit.

ENGLISH.

Miss Owen, Professor.

Course 1. Constructive English. The formal side of English, both written and spoken. A study of the paragraph, of sentence forms, of punctuation, letter writing and formal notes. The entire course correlated with a study of American Classics and the late war literature. Five hours credit. Open to freshmen.

FOREIGN LANGUAGES.

Samuel J. Pease, Professor.
Ernest Bennett, Assistant Professor.

FRENCH.

Course 1. Elementary. Fraser and Squair, French Grammar, Part I, and about 200 pages of easy reading. Emphasis on verbs and pronouns. Composition. Conversation daily. Five hours credit.

Course 2. Intermediate. Fraser and Squair, continued. Modern narrative prose and one easy play. Written exercises, conversation, dictation. Five hours credit.

GERMAN.

Course 1. Elementary. Bagster-Collins: First Book in German, lessons I to XXV; Bacon's Vorwaerts. Conducted mainly in German, but with frequent translation into English. Emphasis on forms and agreement. Five hours credit.

Course 2. Intermediate. Bagster-Collins completed. Reading of one simple play and about 200 pages of simple prose and poetry. Memorizing of songs and poems. Free reproduction of anecdotes, poems, and stories. Five hours credit.

SPANISH.

Course 1. Elementary. Hills and Ford's First Spanish Course, Pittaro's Spanish Reader. Forms and syntax; practice in speaking and writing. Five hours credit.

Course 2. Intermediate. Hills and Ford, completed. Extensive reading and conversation. Idioms and subjunctives emphasized. Five hours credit.

MATHEMATICS AND APPLIED MECHANICS.

J. A. G. SHIRK, Professor.
C. O. VAN DYKE, Associate Professor.
L. E. CURFMAN, Associate Professor.
————, Assistant Professor.
JACK DOTY, Laboratory Assistant in Applied Mechanics.

SCOPE OF WORK. The department offers the usual courses in collegiate mathematics, and also many courses of an industrial and vocational nature. Some of these latter courses do not require an extended mathematical training as a prerequisite, and are intended to aid young men in the solution of shop problems. Many of the technical courses demand considerable mathematical knowledge before they can be studied to an advantage, and consequently those courses which furnish the foundation for them are required as prerequisite. Each course has a statement of the purpose of the course and the other subjects required before entering it.

EQUIPMENT.

MATHEMATICS. The department has a good collection of models in wood and string, illustrating the various geometrical figures. The surveying equipment includes two engineer's mountain and mining transit theodolites, one engineer's wye level, one architect's and builder's level, one farm level, levelling rods, range, poles, tapes, planimeters, protractors, and other minor instruments and accessories. The industrial courses in mathematics are rapidly being provided with drawings of machine parts, models of machines, and in many cases the actual machines, for illustrating the computations involved. For the study of calipers and the slide rule, large models are provided which are easily seen by the entire class.

TESTING OF MATERIALS. Forty-thousand-pound Reihle Universal Testing Machine is available for the study of the strength of wood, metals, concrete, and other materials in tension, compression and shear. Beams and columns not exceeding three and a half feet may be tested for the safe loads they will carry. Reënforced concrete is given particular attention on account of its universal use.

STEAM LABORATORY. The steam laboratory is equipped with several steam engines of various types for the study of governors, valve setting, steam consumption, indicated horsepower, and brake horsepower. The auxiliary equipment comprises a dead weight gauge tester, steam engine indicator, condensers, a transmission dynamometer, prony brakes, pressure and vacuum gauges, injectors, boiler feed pumps, and other minor accessories.

HYDRAULIC LABORATORY. The hydraulic loboratory is equipped with a testing tank for three-inch centrifugal pumps, and the necessary gauges, dynamometers, and other instruments used for testing pumps and water motors.

LIBRARY.

The library is well supplied with excellent books on mathematics, machinery, surveying, water supply and sewage disposal, besides a well-selected list of good magazines on these subjects.

Course 1. PLANE GEOMETRY. The general properties of plane rectilinear figures; the circle and the measurements of angles; regular polygons; solution of numerous original exercises and practical problems. Open only to students not offering geometry for entrance. Three hours credit.

Course 2. SOLID GEOMETRY. Elements of solid geometry; properties and measurements of surfaces and solids. Open to all students not offering Solid Geometry for entrance. Two hours credit.

Course 3. ADVANCED ALGEBRA. This course is open only to those students who have not taken Algebra III in their high-school course. It includes a review of linear and quadratic equations, radicals, involution, evolution, progressions, logarithms, and imaginaries. Two hours credit.

Course 4. COLLEGE ALGEBRA. Rapid review of elementary algebra; graphic representation; complex numbers; series, logarithms; theory of equations; Horner's method. Three hours credit. Prerequisite, one and one-half units of high-school algebra, and one unit of geometry.

Course 5. PLANE TRIGONOMETRY. The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two hours credit. Prerequisite, two units of High-school Mathematics, or course 8.

Course 6. ANALYTICAL GEOMETRY. The straight line; circle; elements of parabola, ellipse and hyperbola; polar coördinates; higher plane curves; elements of solid analytical geometry. Five hours credit. Prerequisite, courses 4 and 5.

Course 7. CALCULUS. Differential calculus: fundamental principles; derivatives; rates; applications to mechanics; maxima and minima; indeterminates; integral calculus: integration; definite integrals; applications to lengths, areas and volumes; moment of inertia; fluid pressure. The student is taught the use of tables of integrals in performing integrations. Five hours credit. Prerequisite, course 6.

Course 8. INDUSTRIAL MATHEMATICS. This course is designed especially for teachers of mechanic arts, but is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks; mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; house building; power transmission; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit. Prerequisite, two units of High-school Mathematics, one unit of Physics, or an equivalent experience in Mechanic Arts.

Course 12. DESCRIPTIVE GEOMETRY. Solution of problems relating to geometrical magnitudes in space and their representations by drawings. Execution of a large number of original exercises. Two class periods and two drafting periods per week. Three hours credit. Prerequisite, Plane Geometry.

Course 13. STRENGTH OF MATERIALS. A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shafting and reënforced concrete, resilience of materials. Two hours credit. Prerequisite, course 5 or 8.

Course 14. CEMENT LABORATORY. The student is taught the standard requirements for cement, and learns to make the tests to determine whether a particlular lot of cement fulfills the requirements. One hour credit.

Course 20. MECHANISM. A study of the motion of machine parts and of methods of transmission of motion by means of links, belts, gears, and cams. This work is related closely to the machine motions used in the steam engine and various shop machines. Two hours credit.

Course 21. ELEMENTARY STEAM POWER PLANTS. A brief study of the general problems of steam power generation; fuels, combustion and steam generation; a study of boiler and engine types; engine mechanisms and power-plant auxiliaries; laboratory practice in testing of steam machinery. Three hours credit.

Course 22. STEAM TURBINES. A special study of the different types of steam turbines with the auxiliary apparatus used with them. Inspection trips to the power plants using these different types of turbines. Two hours credit.

Course 23. HYDRAULIC MACHINERY. An elementary course in the theory and operation of water-power and pumping machinery. Two hours credit. Prerequisite, course 41.

Course 24. REFRIGERATION. A study of the construction and operation of the principal types of refrigerating machinery as used in cold-storage plants and in the manufacture of artificial ice. Inspection trips to plants using these types of machinery. Two hours credit.

Course 30. ELEMENTARY SURVEYING. A brief course in the use of surveyors' instruments; laying out of walks, drives, ditches, and buildings; calculation of cuts and fills; elements of land surveying. Prerequisite, Plane Trigonometry. Three hours credit.

Course 31. HIGHER SURVEYING. Practice in taking topography by transit and stadia, triangulation, measurement of base lines. A topographical survey of an area is made and the resulting contour map constructed from the data obtained. Prerequisite, Elementary Surveying. Two hours credit.

Course 32. MINE SURVEYING. Instruments and methods used for underground traverse and connection surveys; shaft plumbing and special problems. Field work includes the survey of tunnels under construction from the data obtained. Prerequisite, Elementary Surveying. One hour credit.

Course 33. RAILWAY SURVEYING. A study of the methods used in laying out and constructing railways, with field practice sufficient to familiarize the student with these operations; calculation of waterways; laying out of bridges, turnouts, and easement curves. Prerequisite, Elementary Surveying. Two hours credit.

Course 40. DRAINAGE. An elementary study of surface and underground drainage as applied to farms and country roads, taking into account rainfall, slope of ground, drainage area, character of soil, etc. The student is taught how to plan and construct a simple drainage system. One hour credit.

Course 41. HYDRAULICS. The study of the laws governing the action of liquids in pipes and their flow through pipes and over weirs. The types of pumping and hydraulic-power machinery with special reference to the use of pumps in removing water from mines. Three hours credit.

Course 42. GRAPHIC STATICS. The properties of equilibrium polygons and other methods of representing the actions of forces, with application to the determination of stresses in beams, trusses, and arches. Two hours credit. Prerequisite, Strength of Materials.

Course 43. ROADS AND PAVEMENTS. An elementary course dealing with the materials and methods of construction of the various types of country roads and city pavements commonly found in Kansas. Three hours credit.

Course 44. MASONRY. An elementary course dealing with the various materials used in masonry and concrete, and their application to the construction of foundations, piers, abutments, dams, retaining walls, culverts and bridges. Prerequisite, courses 13 and 42. Three hours credit.

Course 45. SEWERS. An elementary course in design and construction of sewers and storm drains, and an introduction to the problem of sewage disposal. Prerequisite, course 41. Two hours credit.

Course 46. WATER SUPPLY. A study of the problems of water supply for rural homes and cities, with special reference to the cities of Kansas; purification of water; types of water systems. Lectures and inspection trips. Two hours credit. Prerequisite, course 41.

Course 47. REENFORCED CONCRETE. A course in the theory and practice in the design of reënforced concrete beams, slabs, columns, arches, retaining walls, and other forms of reënforced concrete construction. Prerequisite, courses 13 and 42. Two hours credit.

Course 54. ADVANCED CALCULUS. This course is intended for those who wish a better knowledge of calculus. It includes center of gravity; moments of inertia; center and radius of curvature; series; expansion of functions; successive and partial differentiation and integration; differential equations; hyperbolic functions; solution of higher equations; miscellaneous practical applications. Three hours credit. Prerequisite, course 7.

Course 55. THEORETICAL AND APPLIED MECHANICS. A study of the laws of statics and dynamics; action of forces upon bodies and the resultant motions; centers of gravity; moments of inertia; work and energy; impulse; momentum and impact; friction and lubrication; centrifugal force and the balancing of machines. Three hours credit. Prerequisite, course 7.

PHYSICAL EDUCATION.

G. W. WEEDE, Director for Men.
PAUL J. ALYEA, Assistant Director.

Course 1. FRESHMAN YEAR. First semester. Three hours a week. One hour credit. This course is of a body-building nature. During the fall when the weather permits this course is carried on outdoors, and consists for the most part of a study and practical application of outdoor games. Beginning about December 1 the work consists of the following:

(*a*) FREE CALISTHENICS: Exercises are selected for their different effects upon the bodily organism and are arranged with the idea of progression. They involve the hygiene or body-building work, educative movements and corrective or remedial exercises.

(*b*) LIGHT APPARATUS: Training is given in use of Indian clubs, dumb-bells, wands, etc.

(*c*) HEAVY APPARATUS: Graded exercises are given in parallel bars, vaulting bars, horses, horizontal bars, traveling and flying rings, etc.

(*d*) INDOOR ATHLETICS AND GAMES. In this will be outlined indoor track meets, basket ball, indoor baseball, volley ball, etc.

Course 2. FRESHMAN YEAR. Second Semester. Three hours a week. One hour credit. This course is a continuation of course 1. Baseball, tennis and track and field athletics are given as soon as weather conditions permit outdoor work.

SHOP WORK.

F. H. Dickinson, Assistant Professor.
R. W. Erskine, Assistant Professor.

Course 1. Pattern Making and Foundry. A course of instruction in the use and care of lathe and tools, and in making a series of problems which give familiarity with the principles involved in both turning and pattern making.

The student is taught the meaning and necessity of draft; the use of core prints, and making of core boxes; shrinkage of iron and other metals; its effect on different shapes and thicknesses of castings; how to join lumber to prevent warding and shrinkage of patterns; the use of segmental work; the meaning of such terms as fillet, boss, flange, rib, web, etc. The simpler problems of foundry practice are studied, including green dry sand and cored work, and the use of the brass furnace and cupola. Two hours credit.

Course 2. Forging and Elementary Machine Shop. Care of the fire, selection of coal and making of coke; proper use of tools; heats for different materials; exercises in drawing out and upsetting; welding, bending, forming, fullering and swedging. Chipping, filing, laying out, centering, drilling, scraping, tapping and threading with hand dies. Practice in the use of lathes, planer, shaper and drill press. Two hours credit.

Course 3. General Machine Shop. This course is a continuation of course 2, designed for the student's use in machine construction, millwrighting and general repair work. Machine construction is the making of small machinery, instruments and tools, the cutting of multiple threads on the lathe; also square, worm and acme threads; the use of the universal milling and grinding machines, such as using the dividing head, plain and different indexing, vertical milling and slotting; making spur, spiral, bevel and worm gears, and plain and cylindrical grinding on the grinder. Prerequisite, course 2. Two hours credit.

Course 4. Advanced Machine Shop. Tool and die making is more advanced work in shop practice. In this course mathematics plays an important part. The practical part consists of the making, annealing, hardening and tempering of all milling machine tools or cutters and of the hand tools, such as mandrels, taps, dies, reamers, drills and all necessary small tools. Internal grinding is also given, and the making of jigs. Die making consists of the making, annealing, tempering, etc., of dies and punches for practical use on our punch press. Prerequisite, courses 2 and 3. Two hours credit.

VOCATIONAL COURSES.

These courses are planned to give the student, in the shortest time possible, the knowledge and manual preparation which are essential to the skilled worker. The student leaves out all preliminary studies, once thought so essential, and goes at once to the study of the work he has chosen to do. He masters the "why" as he learns the manipulation. He is allowed to advance as rapidly as his ability permits. The working conditions are made as nearly like those in real working experience as is possible to make them. Emphasis is placed upon acquiring that skill and ability which will enable him to do quickly and thoroughly the service which he is to be employed to do.

These courses are designed for those who are already workers in the vocation and who wish to become more proficient, and thus do more and a better class of work; also for those who wish to prepare themselves to enter their chosen field.

A certificate is given at the completion of any course, showing the work accomplished, and at the completion of all the divisions of the course a diploma, stating such completion, is given.

Vocational courses include courses for miners, steam engineers, electrical workers, and telegraphers.

ELECTRICIANS' COURSE.

The work offered in this vocation consists of a number of courses. The completion of any one leads to a certificate showing that the work has been completed for that course. The completion of all the courses outlined below leads to a certificate showing the completion of the entire course, and is designed to give one a general working knowledge of electricity.

The purpose of this course is to train young or mature men in the different lines of electrical work, so that they may fill the different positions in our various industries requiring a knowledge of electrical work. There are many men who have not had opportunity for the educational training necessary for an electrical engineer, but who desire to be able to do well some line of electrical work. This course is planned for that type of men.

VOCATIONAL COURSE FOR ELECTRICIANS.

FIRST YEAR.

First Semester:	*Units.*	*Second Semester:*	*Units.*
Electrical Wiring	¼	Practical Mathematics	½
Electrical Installations	¼	Generators and Motors	½
Elementary Electricity	¼	Mechanical Drawing	¼
Power Transmission	¼	Storage Batteries	¼
Practical Mathematics	½	Auto Electricity	¼
Related Science	½	Electrical Signs	¼
Carpentry	¼	Armature Winding	¼
Mechanical Drawing	¼	Electrical Benchwork	¼
	2½		2½

A COURSE FOR MINERS.

This is a practical course for all who are interested in mining. The information contained is essential to operator, manager, superintendent, foreman, fire boss or digger. It is essential that the men who are engaged in this extremely important industry know thoroughly the very best methods of operation and the safest and most economic way to get the coal to the surface. A complete understanding and practice of the science involved in this work will greatly lessen the accidents which occur in our Kansas mines, give the men underground better working conditions, purer air to breathe and less liability to accident.

Emphasis is placed upon the practical side of the work—"Use the head as well as the muscle." The course includes the following: Courses in mine gases and ventilation, timbering, explosives and haulage, together with the mathematics and sciences involved in the work of the miners and those directly engaged in this industry.

VOCATIONAL COURSE FOR MINERS.

First Semester:	*Units.*
Mine Gases	⅛
Safety Lamps	⅛
Practical Mathematics	½
Related Science	½
English Composition	½
Mine Ventilation	¼
Carpentry	¼
Mechanical Drawing	¼
	2½

Second Semester:	*Units.*
Mine Machinery	¼
Geology	⅛
Practical Mathematics	½
Generators and Motors	½
Hoisting and Haulage	¼
Timbering	⅛
Forging and Bench Metal	¼
Mechanical Drawing	¼
Preparing Shots	⅛
Mine Lightning	⅛
	2½

STATIONARY ENGINEERING.

This course in designed for men who have had experience as oilers, firemen and assistant engineers, who want to qualify themselves to pass examinations for an engineer's certificate to run portable and hoisting engines or stationary plants. The practical engineer will also find much that is valuable to him in the lectures and discussions on the design and operation of engines and boilers. A fair knowledge of practical mathematics is necessary to successfully complete this course, and men who are not sufficiently trained in this important subject should study it along with the other subjects.

A certificate is given at the completion of any one subject, these being statements that the student was in attendance while the subject was being given, and that his work was satisfactory.

A diploma in steam engineering is given at the completion of the entire group of subjects.

VOCATIONAL COURSE FOR STATIONARY ENGINEERS.

First Semester:	*Units.*
Practical Mathematics	½
Steam Boilers	¼
Steam Engines	¼
Related Science	½
English Composition	½
Carpentry	¼
Mechanical Drawing	¼
	2½

Second Semester:	*Units.*
Practical Mathematics	½
Steam Turbines	¼
Pumping Machinery	¼
Gas Engines	¼
Electric Wiring	¼
Generators and Motors	½
Forging and Bench Metal	¼
Mechanical Drawing	¼
	2½

DEPARTMENT OF CHEMICAL AND PHYSICAL SCIENCES.

Course 1. GASES. This course includes the careful study of the different gases found in mines. The composition and properties of the gases are thoroughly studied. The tests and means employed for identifying the different gases found in mines, together with the effect those have on men working in the mines, is included in this course. Eight lessons will be needed to complete the course unless one is somewhat familiar with these gases before beginning the course. Credit, one-eighth unit.

Course 2. SAFETY LAMPS. This course includes careful study of the construction of different kinds of lamps. The scientific principles involved in the construction of the safety lamp, together with its proper use, are carefully studied. At least four lessons will be required to complete this course unless one is quite familiar with safety lamps. Credit, one-eighth unit.

Course 3. MINE VENTILATION. This course includes the study of mine ventilation and the various systems in common use in coal mines. Twelve lessons will be required to complete the course unless one has already made a careful study of this important subject. No subject is of greater importance to the miners than proper ventilation. Credit, one-fourth unit.

Course 4. RELATED SCIENCE. This course consists of a study of the foundation principles of physics and chemistry as related to the vocational line pursued by the student. The course includes both textbook and laboratory work in such subjects as oxygen, nitrogen, carbon dioxide, carbon monoxide and such other chemical principles as are involved in the vocation. Such principles of physics are involved in the vocational work as the simple principles of machines, hydraulics, heat, etc. Credit, one-half unit.

Course 6. MINE LIGHTING. This course includes a study of the different systems used in the lighting of the mines. The advantages and disadvantages of the different systems are studied. The cost of operation is also considered. Credit, one-eighth unit.

Course 7. GEOLOGY. A course dealing with the strata above and below the coal; fissures, faults, horsebacks and slopes, the composition and physical properties of the strata overlying the coal. This course is given to prepare for the course in timbering. Credit, one-eighth unit.

Course 8. TIMBERING MINES. Six lessons will be needed to complete this course. Many of the accidents that occur in our mines might be avoided by proper timbering. The different ways of testing the roof and the proper placing of props are thoroughly studied in this course. Credit, one-eighth unit.

Course 9. PREPARING SHOTS. A study of the state laws that apply to shot preparation, the strength of different grades of powder and the conditions under which different grades of explosives should be used. A study of the most efficient powder used in blasting coal where the top and bottom are smooth, where rolls exist in the top or bottom and the preparation of the shot for the best results. The explosives to use and the preparation of shots in sinking, in horsebacks and brushing. This course will also deal in the chemical and physical tests of powders as used in the different powder manufacturing plants. Credit, one-eighth unit.

Course 10. MINE MACHINERY. Six lessons will be needed to complete this course, which includes a study of ventilating fans, water pumps, trams, hoisters and electrical motor machinery. This course will also include the study of the principles of "safety first" as applied to the use of all machinery. Credit, one-fourth unit.

Course 11. GENERATORS AND MOTORS. The mechanism of dynamos and motors is studied from the laboratory standpoint. The study of the repair and construction of dynamos and motors. One-half unit.

Course 12. AUTOMOBILE ELECTRICITY. A companion course to course 9. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts. Credit, one-fourth unit.

Course 13. HAULAGE. This course includes the different systems of haulage that are in use in coal mines, the laying out of tracks and switches, the sizes and kinds of mine cars, and other practical points connected with the installation and upkeep of mine roads and haulage equipments. Four lessons. Credit, one-fourth unit.

Course 2. ARMATURE WINDING. The principles involved in the structure of an armature are studied from both text and lecture demonstrations. The fundamental principles employed in winding of both alternating-current and direct-current generators and motors are studied in this course from text, lecture demonstration, and practice work on different types of machinery. The lap and wave windings and the study of commutator construction will be stressed. The windings and connections for transformers are also studied. The study of soldering and installation, together with the size of wire used, will be made a part of this course. Credit, one-fourth unit.

Course 3. ELECTRIC INSTALLATION. The purpose of this course is the careful study of installation of dynamos and switchboards, together with the connection of the generators with the source of power, and the switchboard with its connection with the transmission wires. This is a very important course, dealing not only with the installation of the larger generators, but also the location and operation of motors of different sizes connected therewith. Credit, one-fourth unit.

Course 4. POWER TRANSMISSION. As the name indicates, this course deals with the transmission of electricity, from the source to the place where it is used to do work. It includes the study of the transformer, its location and connections; also, house-wiring for lights, estimating costs, and other problems connected with illumination. The designing and construction of electric signs is also studied. Credit, one-fourth unit.

Course 5. STORAGE BATTERIES. The construction and operation of storage batteries is carefully studied. The charging of storage batteries receives careful attention. The problems of repair are also considered. Storage batteries are being used more and more in electrical work, and the proper use and repair of them is of great importance to electrical workers in the fields where batteries are used. Credit, one-fourth unit.

Course 6. ELECTRICAL SIGNS. A study of electrical signs and the actual construction of a "sign" in the laboratory. Credit, one-fourth unit.

Course 7. ELECTRIC WIRING. A practical course in the wiring of electrical lighting systems, appliances, and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Credit, one-fourth unit.

ENGLISH.

Course 1. ENGLISH COMPOSITION. A course in written English consisting of business and literary styles, letters, notes, and book reviews. Some attention to punctuation and form. Anything and everything, in short, that a vocational student thinks he would like to have. Credit, one-half unit.

MATHEMATICS AND APPLIED MECHANICS.

Course 1. PRACTICAL MATHEMATICS. A course in practical arithmetic such as is necessary in electrical or mechanical trades. Elements of algebra and geometry as applied to the formula and calculations encountered in the practical vocations. One-half unit credit.

Course 2. PRACTICAL MATHEMATICS. A continuation of course 1 with some attention given to the use of the slide rule. Elementary mechanics as applied to mining and shop machinery. One-half unit credit.

Course 3. STEAM BOILERS. A brief study of the operation of steam boilers, fuels, steam generation, injectors, with some laboratory practice in the testing of boiler appliances. One-fourth unit credit.

Course 4. STEAM ENGINES. An elementary course in the study of steam engines, engine mechanisms, and power-plant appliances, with laboratory work in the operation and testing of steam engines. One-fourth unit credit.

Course 5. STEAM TURBINES. A brief study of the different types of steam turbines and the auxiliary apparatus necessary for their operation, with inspection trips to plants using steam turbines. One-fourth unit credit.

Course 6. PUMPING MACHINERY. A course in the operation of boiler feed pumps, centrifugal pumps, and other types of pumping machinery. Laboratory work in the testing of these types of pumps will comprise part of the work of the course. One-fourth unit credit.

EXTENSION WORK.

Evening and day classes for men engaged in industrial pursuits are organized at Pittsburg and other centers wherever there is sufficient demand. Classes for miners, steam engineers, electricians, telegraphers and draftsmen have been organized and well attended. These courses will be extended to other lines of technical work as rapidly as the facilities of the institution will permit. A description of the courses now offered is given below.

A COURSE FOR MINERS.

Course 1. TECHNICAL INFORMATION. This course includes the science and mechanical principles that are related to mine occupation. The number of lessons required to complete the course depends on the previous training of the student. One who is familiar with the scientific and mechanical principles involved may complete this course in four lessons. Those who are not fairly well grounded in the above principles will need to give eight or ten lessons to this subject.

Course 2. GASES. This course includes the careful study of the different gases found in mines. The composition and properties of the gases are thoroughly studied. The tests and means employed for identifying the different gases found in mines, together with the effect these have on men working in the mines, is included in this course. Eight lessons will be needed to complete the course unless one is somewhat familiar with these gases before beginning the course.

Course 3. SAFETY LAMPS. This course includes careful study of the construction of different kinds of lamps. The scientific principles involved in the construction of the safety lamp, together with its proper use, are carefully studied. At least four lessons will be required to complete this course unless one is quite familiar with safety lamps.

Course 4. MINE VENTILATION. This course includes the study of mine ventilation and the various systems in common use in coal mines. Twelve lessons will be required to complete the course unless one has already made a careful study of this important subject. No subject is of greater importance to the miners than proper ventilation.

Course 5. TESTING APPARATUS USED IN MINES. This course includes the study of the uses of such pieces of apparatus as the anemometer, barometer, thermometer and water gauge as related to coal mines. One can complete this course in three lessons. It is quite important that men know how to use properly the apparatus upon which the proper ventilation of the mines largely depends, and to be able to make such calculations from the readings of the instruments as will enable them to know the character of the air in the mines.

Course 6. Mine Lighting. This course includes a study of the different systems used in the lighting of the mines. The advantages and disadvantages of the different systems are studied. The cost of operation is also considered.

Course 7. Geology. A course dealing with the strata above and below the coal; fissures, faults, horsebacks and slopes, the composition and physical properties of the strata overlying the coal. This course is given to prepare for the course in timbering.

Course 8. Timbering Mines. Six lessons will be needed to complete this course. Many of the accidents that occur in our mines might be avoided by proper timbering. The different ways of testing the roof and the proper placing of props are thoroughly studied in this course.

Course 9. Shot Firing. Three lessons will be needed to complete this course. The different kinds of explosives that are used in coal mining and the different systems of shot firing are studied. The dangers of explosives and proper handling of explosives receive attention.

Course 10. Mine Machinery. Six lessons will be needed to complete this course, which includes a study of ventilating fans, water pumps, trams, hoisters and electrical motor machinery. This course will also include the study of the principles of "safety first" as applied to the use of all machinery.

Course 11. Mine-rescue Work. The course given by the United States government in mine-rescue service, or by the state mine-rescue station, complete this course.

Course 12. State Mining Law. A careful study of the state coal-mining laws, together with the duties of various mine officials, make up this course, which will require six lessons to complete it.

Course 13. Haulage. This course includes the different systems of haulage that are in use in coal mines, the laying out of tracks and switches, the sizes and kinds of mine cars, and other practical points connected with the installation and upkeep of mine roads and haulage equipments. Four lessons.

Course 14. Mapping. This course includes the reading of a blue print so as to be able to locate definite points in a mine from a map of the mine. Two lessons.

A course in related drawing, related science, related mathematics and various shop courses will be found helpful to those who seek complete information in the subject of coal mining.

STEAM ENGINEERING.

Course 1. Elementary Steam Power Plants. This course involves the inspection, testing, care and operation of steam plant equipment; the study of heat, its nature and effects; fuels, drafts, types of boilers and the advantages of each type; boiler power of boilers; boiler accessories; types of steam engines; valve setting of the simple slide valve. This course is arranged to be given in either ten or twelve lessons, each of two hours' duration.

Course 2. Advanced Steam Power Plant. A more advanced course in steam engines and boilers, in which principles of design are more completely considered; automatic stokers are given some attention in this course, and means of handling coal by machinery; steam turbines, compound engines, and the use of superheated steam are given considerable prominence in this class. Where it is possible inspection trips are made to some of the plants using different types of engines and boilers.

The work of this course is arranged to be completed in ten to twelve lessons of two hours each.

Course 3. STEAM LABORATORY. This is an experimental course given only at the Normal and involves the testing and manipulation of steam engines and pumping machinery. The brake horsepower and indicated horsepower of steam engines are measured by means of suitable appliances, and the setting of valves is checked by means of steam indicator diagrams. The steam consumption of engines is measured, and the efficiency of injectors and boiler feed pumps compared. This course is arranged to be completed in ten or twelve evenings of two hours each.

ELECTRICIANS' COURSE.

Course 1. D. C. AND A. C. MACHINERY. The construction, operation and repair of dynamos and motors are carefully studied in this course. The text and lecture demonstration includes the fundamental principles involved in different types of electrical machinery. Opportunity will be offered for the student to examine and operate different types of electrical machines, make important electrical measurements, and solve problems connected therewith.

Course 2. ARMATURE WINDING. The principles involved in the structure of an armature is studied from both text and lecture demonstrations. The fundamental principles employed in winding of both alternating-current and direct-current generators and motors are studied in this course from text, lecture demonstration, and practice work on different types of machinery. The lap and wave windings and the study of commutator construction will be stressed. The windings and connections for transformers are also studied. The study of soldering and installation, together with the size of wire used, will be made a part of this course.

Course 3. ELECTRIC INSTALLATION. The purpose of this course is the careful study of installation of dynamos and switchboards, together with the connection of the generators with the source of power, and the switchboard with its connection with the transmission wires. This is a very important course, dealing not only with the installation of the larger generators, but also the location and operation of motors of different sizes connected therewith.

Course 4. POWER TRANSMISSION. As the name indicates, this course deals with the transmission of electricity, from the source to the place where it is used to do work. It includes the study of the transformer, its location and connections; also, house-wiring for lights, estimating costs, and other problems connected with illumination. The designing and construction of electric signs is also studied.

Course 5. STORAGE BATTERIES. The construction and operation of storage batteries is carefully studied. The charging of storage batteries receives careful attention. The problems of repair are also considered. Storage batteries are being used more and more in electrical work, and the proper use and repair of them is of great importance to electrical workers in the fields where batteries are used.

Course 6. ELECTRICAL SIGNS. A study of electrical signs and the actual construction of a "sign" in the laboratory.

Course 7. ELECTRIC WIRING. A practical course in the wiring of electrical lighting systems, appliances, and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits.

Course 8. ELECTRIC WIRING II (ILLUMINATION). A practical course in the designing of illumination distribution for all purposes—home, school, business house, and street lighting. It includes a study of the various types of light shades and reflectors, and their adaptability for various classes of service.

Course 9. GAS ENGINE. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics or in automobiles. Laboratory and lectures.

Course 10. AUTOMOBILE ELECTRICITY. A companion course to course 9. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts.

TELEGRAPHY.

This course is intended for those desiring to become telegraph operators and others interested in different phases of this subject.

RADIO. A practical course in sending and receiving messages by means of the ordinary telegraph key and buzzer. Instruction is given in the international code, and is intended to help the student for service in the signal corps of the United States army, or in any commercial field where wireless telegraphy is needed. The student is advised to take typewriting in connection with this course, so that the messages may be received and typed at the same time. Opportunity is given the student to practice sending and receiving messages.

MORSE TELEGRAPHY. A course is also given in American Morse code for both young men and young women wishing to qualify themselves for positions in railroad and commercial service. A student who will apply himself can in a short time learn to send and receive telegraphic messages. The student is advised to study typewriting in connection with this course, and arrangement is made for so doing, so that one may learn to receive and type a telegraphic message at the same time. The student is urged to advance as rapidly as possible, which greatly depends on his application and ability to grasp the subject.

FUEL CONSERVATION.

This course is for firemen and those interested in the economic and smokeless combustion of coal. The course is designed to give such information to those who burn coal as to make them use it most economically. A study of the ash, smoke and combustible gases as very commonly seen in all our heating and industrial plants will show that there is a considerable per cent of waste of coal. A thorough knowledge of the combustion of the coal used and the principles of combustion employed will enable those who use coal to get the largest possible number of heat units therefrom. Lectures and suggested readings, together with demonstrations to illustrate the principles involved, are given. It is expected that those who take the course will find its application in the work they have to perform, and the hope is that by use of the principles of chemistry employed the man will be able, through the use of his head as well as his hands, to obtain the highest possible results.

Manual Arts Building S. M. T. N.

SECTION VII.

Summer Session.

CALENDAR, 1921.

May 31, Tuesday	Summer Session opens with enrollment.
June 1, Wednesday	Enrollment completed and assignment of work.
July 29, Friday	First term summer session closes.
August 1, Monday	Second term summer session opens.
August 26, Friday	Second term summer session closes.

STATE BOARD OF ADMINISTRATION.

GOV. HENRY J. ALLEN, *Chairman.*
DR. WILBUR N. MASON. HON. H. J. PENNEY.
HON. E. L. BARRIER.
HON. JAMES A. KIMBALL, *Business Manager.*
C. W. MYERS, *Assistant Business Manager.*
E. B. CRONEMEYER, *Assistant Business Manager.*
MALCOLM M. GRAY, *Secretary.*

GENERAL INFORMATION.

The 1921 Summer Session of the State Manual Training Normal School opens June 7 and closes August 6. The growth of the State Manual Training Normal School in importance and favor with teachers has been remarkable. Approximately 1,800 teachers attended the Summer Session last year. We predict an increased attendance for 1921. The rapid growth and manifest interest in the Summer Session is the best evidence that teachers are appreciating the opportunity afforded them by means of the Summer Session for increasing their efficiency; working out their degrees, life diplomas, or securing the three-year or one-year state certificates, and the certificates for special subjects: music, drawing, agriculture, home economics, commerce, industrial and applied arts, and other occupational subjects.

At the present time the country is confronted with a somewhat alarming condition—a condition respecting a shortage of teachers for the public schools. The demand for teachers during the past year in all lines has far exceeded the available supply. The opportunity for good positions afforded teachers at the present time is certainly great. Indeed, the inducements held out to teachers for increasing their efficiency are attractive.

Ten regular members of our Faculty, each a specialist from a standpoint of both educational preparation and practical experience, give their entire time to the Department of Industrial and Applied Arts. (See courses offered.) Eight skilled and experienced instructors devote their entire time to the Department of Household Economics. In addition to these extensive departments offering courses leading to the degree, the following departments also offer courses leading to the degree: biology, English, history, mathematics, chemical and physical sciences, education, and the languages.

GENERAL COURSE.

Special attention is called to the course known as the "general course" —a course with sufficient flexibility to be especially adaptable to students desiring to make preparation for general high-school teaching.

Two-year courses leading to the life diploma or special certificate are offered in the following: rural teachers, kindergarten teachers, primary teachers, intermediate teachers, grade teachers, commercial teachers, agriculture, drawing supervision, music supervision, industrial arts, household economics, public speaking, physical education, and industrial physics.

Reviews for beginning classes are conducted in every subject required for county teachers' certificates. Examinations are held at the institution at the close of each month for county certificates.

The one dominant policy of the State Manual Training Normal School is that vital and practical relating of the so-called cultural or academic subjects to the industrial or vocational subjects. We doubt if in any teacher's college greater opportunity is afforded the teacher during his or her period of preparation, even in strictly academic lines of study, to come into as close contact with the content and method of industrial and vocational training, and thereby discover the way for making the more practical application of academic subjects. This educational policy and the success of its application is meeting a long-felt and specific demand in present-day educational trend.

For the Summer Session the regular Faculty will be supplemented by several additional instructors—men and women selected for special fitness along certain lines.

One of the most enjoyable and profitable features of our Summer Session has been the array of splendid talent secured from year to year for special lectures and conferences. The Summer Session of 1919 will be no exception to the past.

SPECIAL FEATURES.

We are planning three or four special educational and entertaining features for the Summer School students this session. We are not quite in a position to announce these, but you may rest assured that they will be of the highest character. In addition to these, special lectures of the very best that can be secured will appear during our Summer School, and thereby bring to the Summer Session one of the largest and best special programs that we have ever offered, or that will be offered anywhere in the West.

STANDING.

The State Manual Training Normal School is a fully accredited teacher's college, with membership in the North Central Association of Colleges and Universities. This affiliated standing is of material advantage to students who wish to transfer to other institutions, or to enter other colleges or universities for graduate study. The life diplomas and degrees of the institution are being accepted as state certificates in practically every state in the Union, at least wherever a state accepts a degree or diploma from an institution in lieu of a state certificate.

FEES.

No tuition is charged teachers who are residents of the state of Kansas. An incidental fee of $7 is charged each student who enters the institution for the Summer Session; also a hospital fee of $1 is charged each student, except in cases where a student has paid the $1 hospital fee during the preceding regular year. Persons not residing in Kansas are charged $10 in addition to the above incidental and hospital fees. Assessments are made for materials actually used in certain departments.

Splendid rooming facilities are available in easy walking distance of the institution, at rates ranging from 75 cents to $1.50 per week.

EXPENSES.

Excellent table board may be had at $4 to $6 per week in private families or in groups.

A cafeteria is operated under the management of the College where meals and lunches are served at approximate cost, ranging from $3.50 to $4 per week.

Many teachers find it both pleasant and profitable to take a cottage or suite of rooms, do light housekeeping, and lunch at the cafeteria. By this method the cost of meals may be reduced to a minimum.

THE CREDIT HOUR.

For each credit hour of any course in the College the student is expected to devote himself for three hours either in the classroom, laboratory, or outside preparation per week for one semester.

DIPLOMAS AND CERTIFICATES.

One-year State Certificate. Students completing the Normal High School professional course are entitled to a one-year state certificate. Regular high-school graduates who have attended the State Manual Training Normal School one-half semester and completed eight college hours of work, six of which are professional, are entitled to one-year state certificate.

Three-year State Certificate. Students who have attended the State Manual Training Normal School one semester and completed thirty-two hours of college work, eight of which are professional, are entitled to a three-year state certificate.

LIFE CERTIFICATE.

Students who have attended the State Manual Training Normal School one semester, and who have met the requirements of the first two years of any of the college courses—which must include English, or Public Speaking, 4 hours; Physical Education, 2 hours; Professional, 14 hours—are entitled to a life certificate for elementary two-year and junior high schools.

DEGREES.

Students who comply with the following requirements will be granted a degree of Bachelor of Science in Education, which is a life certificate to teach in any of the elementary or high schools of the state of Kansas.

1. Students must have completed 124 semester hours, 4 of which are in the Department of Physical Education.
2. At least 30 hours of the 124 must be completed in this institution.
3. Five hours of these 30 must be in the department in which he is majoring.
4. At least 8 hours of professional work must be completed in addition to those required for life diploma chosen from junior and senior subjects.
5. At least 40 hours of the 124 must be selected from the junior and senior subjects.
6. The minimum of actual resident attendance is one collegiate year.
7. No student may offer more than 20 hours in any subject in which a major is not offered.
8. No more than 8 hours of Commerce will be accepted toward this degree.
9. No more than 4 hours of the 124 will be allowed for practice courses in Physical Education.
10. Students must complete all the requirements of any of the four-year courses in which he has chosen his major.

SPECIAL CERTIFICATES.

Those desiring to teach the following subjects: Industrial arts, agriculture and home economics, will be issued a special certificate authorizing them to teach such subject or subjects upon completion of special courses hereinafter outlined in the catalogue, each of which must embrace the following: major subjects 24, minor subjects 12, education 14, physical education, 2, elective, 10.

By major is meant credit hours upon subjects which represent the particular department in which the candidate wishes certification to teach.

By minor is meant credit hours in subjects from any other department in which candidate is not necessarily specializing, but which he chooses as his second preference, such arrangement being made to accommodate those who may desire or be required to teach subjects outside of their department.

In cases where candidates desire to be certificated to teach a minor subject or subjects, the 12 hours designated for such subjects may be considered elective, and may be chosen from any subjects in accordance with courses catalogued.

Special certificates in industrial arts and home economics will be issued for a period of three years, and may be renewed by any normal school in Kansas for a period of three years, provided 30 additional hours of college work have been completed, of which 16 hours at least must have been selected from that department in which specialization is being made. The special certificate may be renewed a second time only upon the completion of 30 additional hours of college work, and instead of a special certificate the candidate will then have completed his full college course, and will be issued the regular Bachelor of Science degree in Education, which will authorize him to teach any subject or subjects in any of the public schools of Kansas for life.

SPECIAL LIFE DIPLOMA.

Those desiring to teach the following subjects: Music, drawing, physical education and commerce, in the senior or four-year high schools, will be issued the special diploma upon the completion of such courses as are outlined in the General Catalogue.

LIFE CERTIFICATE.

KINDERGARTEN CERTIFICATES. On completion of the kindergarten course—a course of two years, presupposing high-school graduation or its equivalent—a diploma is issued which, in accordance with a law passed by the legislature of 1907, is a certificate valid for kindergarten work in the state of Kansas.

PRIMARY CERTIFICATE. Those persons completing the two-year primary course will be given a life certificate to teach primary work.

INTERMEDIATE GRADE TEACHER'S CERTIFICATE. Those persons completing the two-year grade teacher's course will be given a life certificate to teach in the grades.

RURAL TEACHER'S CERTIFICATE. Those persons completing the two-year rural teacher's course will be given a life certificate to teach in the rural schools of the state.

One hundred twenty-four semester hours of work are required for graduation from the degree course. Four hours of this work are in the Physical Education Department. A semester hour consists of one class period per week in a subject for one semester, except laboratory, drawing, manual and physical training subjects, in which two class periods per week for a semester constitute a semester hour.

No more than four hours college credit of the one hundred twenty-four will be allowed for practice courses in physical education.

COUNTY EXAMINATIONS.

Regularly enrolled students of the State Manual Training Normal School may, upon the payment of the usual examination fee of one dollar, present themselves for examination for county certificates, to be conducted under the supervision of the officers of the State Manual Training Normal School, at any time when such an examination is given at any point in the state. The papers in such examination will be sent to any county designated by the applicant, there to be examined by the county board of examiners, who will issue certificates to the successful applicants under the same conditions as if the examination had been conducted under their supervision.

ELECTIVES.

Choice of electives by students should be made upon the advice of the head of the department in which the student is majoring.

NUMBERING OF COURSES.

All courses numbered 1 to 50 are open to freshmen and sophomores. Those numbered 51 to 100 are open to juniors and seniors. Any variation from the above will be upon the recommendation of the heads of the respective departments.

In the History Department courses 62 and 65 are open to all classes.

AGREEMENT AS TO TRANSFER OF CREDITS.

Graduates in the degree courses offering at least 120 hours of college credit, except credit from the following courses, are admitted to the Graduate School of the University of Kansas as candidates for the degree of Master of Science in Education on the following conditions:

At least 40 hours of the 120 hours must be selected from senior college subjects.

A maximum of 30 hours will be accepted in Domestic Art, Domestic Science, and Industrial Arts.

A maximum of 20 hours in Public Speaking and 6 hours in Commerce will be accepted.

Credit not accepted as entrance to the Graduate School for the M. S. degree from the following courses: Bookkeeping, business arithmetic, penmanship, shorthand, business English, typewriting, dictation and office practice, commercial correspondence, business forms and spelling, domestic art 1*a*, domestic science 1*a*, history courses 61 and 65; music, except in School of Fine Arts, piano, voice, glee club and chorus work not accepted.

The above courses are all considered essential in the preparation of teachers for their work. They are not sufficiently advanced and of such character as to warrant their being presented as entrance credit to graduate schools.

Candidates desiring to enter the University of Kansas who have not completed the degree course of 120 hours will receive credit hour for hour for the work done in all courses in the catalogue, except as above specified.

Students desiring to enter the Graduate School of the University for the Master of Arts degree will be given entrance credit in so far as the courses or degrees presented show substantial equivalence to the University requirements for similar credit.

THE LIBRARY.

The library contains about 8,500 volumes, *carefully selected with reference to the needs of the different departments*, besides a large number of pamphlets. The librarian and assistant are always ready to be of service to students who wish to use the library. The reading room contains a large and well-chosen list of periodicals.

AMOUNT OF WORK.

Eight hours constitute regular work for an individual during the Summer Session. No one may be enrolled for exceeding nine hours, except by permission of the Committee on Advanced Standing. Application for such additional hours must be made in writing, and must not be made for more than ten hours. Students enrolling after the first week are not permitted to enroll for work exceeding eight hours, and for each week of delinquency in enrolling thereafter an hour will be subtracted from the eight hours constituting regular work.

RECREATION.

Many things in and near the city of Pittsburg make the State Manual Training Normal School a delightful place in which to spend these summer weeks:

The splendidly equipped buildings of the institution.

The famous McCray Municipal and College band, with weekly concerts in Lincoln park and on the Normal campus.

The annual excursion to the Ozark mountains. Seventy miles of mountain scenery. A day of fishing, boating and bathing in crystal waters in the midst of a beautiful mountainous environment.

Twenty minutes' interurban ride to picturesque Spring river. Fine place for boating, bathing and picnicking.

Opportunity to see in operation, in the great coal fields of Kansas, the largest steam shovels in the world.

Opportunity to inspect the great coal mines, machine shops, power plants and factories, which are among the greatest in the Mississippi valley.

One hundred and twenty-five miles of interurban railway, reaching from Pittsburg into the greatest lead and zinc fields in the world.

Intramural tennis and baseball, with special directions and supervision in coaching these games. All playground games under the direction of Department of Physical Science.

Week-end excursions under the direction of various departments to places of special interest.

SMITH-HUGHES COURSES.

The institution has been approved for the preparation of trade and industrial teachers by the Federal Board, and courses are being arranged leading to that end. Full courses for the preparation of such teachers will be organized and in full operation the beginning of the fall semester. However, many teachers will want to begin their preparation at the earliest possible moment, and so to meet that demand many of the fundamental courses will be offered during the Summer Session. There is a large demand for such teachers, and it will pay you to investigate this matter thoroughly when you come for your summer enrollment.

For further particulars and specific information address President W. A. BRANDENBURG.

INSPECTION TOURS.

During the Summer Session many inspection tours are organized for the purpose of giving students interested an opportunity to see the real practical operations in connection with many of their studies. Such trips in the past have been organized and conducted under competent leaders in the departments of Physical Science, Biology, Mathematics and Industrial Arts. Many other trips will be planned for this summer if students desire them.

AUGUST SESSION, 1921.

During August, 1919, the Institution offered a four weeks' term to students who found it necessary to work out a few additional hours for their certification. There were so many more people who took advantage of this offer that it seemed wise to repeat it in the month of August, 1920, and to our surprise more than 200 teachers found it convenient to work out a few additional hours helping them to a better certificate than they could otherwise have had. The Institution, therefore, proposes to continue the August session for 1921 for the accommodation of all teachers who may desire to take advantage of it.

If you are interested in this session, write President BRANDENBURG for further information.

ARTS AND CRAFTS.

BERTHA SPENCER, Associate Professor of Applied Arts.

Course 1. LEATHER TOOLING. Processes of tooling, modeling and coloring. Designs executed on useful articles, as purses, notebook covers, card cases, mats, table runners, etc. One hour credit.

Course 2. ART METAL. Opportunity for individual expression in copper and brass in the making of such projects as trays, bag tags, desk sets, napkin clips, bar pins, hat pins, etc. One hour credit.

Course 3. JEWELRY. Saw piercing, etching, soldering and stone setting. Suggested projects: chains, watch fobs, hat pins, rings, brooches, etc. Art Metal is a prerequisite for this course. One hour credit.

Course 4. ELEMENTARY BASKETRY. Making of simple pieces in reed and raffia in which design is an important feature. One hour credit.

Course 5. ADVANCED BASKETRY. Advanced problems in reed and raffia and pine needle and Japanese matting. Suggested projects: lamps, floor vases, trays, chairs, foot-stools, etc. One hour credit.

Course 6. BOOK BINDING. Simple problems in portfolio, notebooks, blank books, the binding of magazines and the mending and rebinding of books. One hour credit.

Course 7. ELEMENTARY CLAY WORK. Clay modeling, making of tiles, spills, vases and bowls with one and two curves. One hour credit.

Course 8. ADVANCED POTTERY. Casting, making of molds and glazing. Suggested projects: electric toasters, pitchers, jardiniers, etc. One hour credit.

Course 9. WOOD CARVING. Work in soft and hard woods. Original designs in relief and incised work on projects such as hand mirrors, book ends, trays, boxes, etc. One hour credit.

Course 10. HANDWORK FOR GRADE TEACHERS.

BIOLOGICAL SCIENCES.

O. P. DELLINGER, Professor.
W. E. RINGLE, Associate Professor.
HARRY HALL, Associate Professor.
*J. R. WELLS, Assistant Professor.
ELIZABETH FLEESON, Assistant Professor.
ELIZABETH MOULTON, Assistant Professor.
FINES GREEN, Student Assistant.
ROBLEY MATHEWS, Student Assistant.
JOHN WEIDENMANN, Student Assistant.

There has developed within recent years a demand for better and more universal biological instruction. With the introduction of agriculture and domestic science into our schools, a knowledge of biology is demanded of a much larger number of individuals. For a long time biology was taught for its general cultural value or in its application to medicine; and to-day most of the courses in colleges and universities, and in some normal schools are organized to meet the needs of the general student or the student of medicine. Teachers of biology have failed to realize that the mass of biological instruction from now on must be largely designed for students in agriculture, domestic science, education, and medicine, and the courses must be so constructed as to meet the special needs of these students.

It is the plan and purpose of the Department of Biology to offer instruction in biology as it applies to these fields; and many of the courses organized are especially for the student of domestic science, agriculture, or education. There are, however, a few courses of a general nature, but they are fundamental to any education.

The laboratories are well equipped to give the courses offered in biology. The equipment consists of forty new compound microscopes, with fifteen oil immersions, dissecting microscopes, prepared microscopic slides for histologic embryology and bacteriology, some four hundred lantern slides for demonstrations, microtomes, ovens, glassware and stain for histological studies, and incubators, sterilizer and glassware for cultural work in bacteriological, aquaria and vivaria for the study of living specimens in the laboratory. Also in connection with the department there is a greenhouse where students can carry on experiments in plant growth, propagation and plant breeding. The School has recently purchased thirty-five acres of ground on which there are large ponds. Here the students can study a great many of the native plants and animals in their natural habitat.

BOTANY.

Course 1. General Biology. In this course the student studies the laws of growth and reproduction of living organisms as they are illustrated in plants. Here emphasis is given to the economic phases of botany. Plants are studied in their relation to medicine, textiles, lumber, ornamentation and food production. Attention is given to propagation and distribution. Three hours credit.

Course 3. Invertebrate Zoölogy. In this course a series of forms representative of all the phyla of the invertebrates is studied. The emphasis is placed on morphology, life history and behavior. Prerequisite, course 1 or its equivalent. Credit, five hours.

Course 11. Human Physiology. The purpose of the course is to teach those things that will enable the student to make of his or her body, and also the bodies of those they minister to, the most efficient mechanism possible. The requirements of the body as to food, exercise, sleep, fresh air, bathing, etc. The physiological requirements of children, where they differ from the adult, will be emphasized. The physiology of reproduction will receive the attention it deserves. Four hours credit.

Course 67. Neurology. A study of the gross anatomy, physiology and microscopic structure of the nervous system of the vertebræ. Two hours credit.

Course 68. Nutritional Physiology. As the name implies, the course gives special attention to the physiology of nutrition. It covers about the same field as the first half of course 11, but goes much more into detail, and has more extended laboratory work. Two hours credit.

Course 14. Nature Study. This course is designed especially for primary and grade teachers. It attempts to answer the question, What knowledge of living form is adapted to children between the ages of six and fifteen? A review of the literature in this field is also given. Two hours credit.

Course 15. General Bacteriology. This course is required of all students who major in domestic science or agriculture, and is open to any student in the College course. It is a general introductory course, consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit.

Course 53. Genetics. The course is especially designed for domestic science students, but is open to all students of college grade. A careful review of the literature on heredity and eugenics is given, together with a study of the law of reproduction. Two hours credit.

Course 54. HISTOLOGY AND EMBRYOLOGY. This is a laboratory course in which the student is given an opportunity to make preparations of the animal tissues and to study their miscroscopical structure. Two hours credit.

Course 62. SYSTEMATIC ZOÖLOGY. A classification of the different groups of animals of the state. By appointment only. Two hours credit. Prerequisite, course 1 or 2, or equivalent.

Course 12. PHYSIOLOGY AND HYGIENE. This is a course designed especially for grade- and rural-school teachers, covering the principles of physiology and hygiene. Special emphasis is laid on ventilation, foods, play, eye, and ear hygiene, and those phases of the subject which are of interest to every grade-school teacher. Three hours credit. Fall and summer terms.

Course 19. ENTOMOLOGY. A course in the classification and collection of life histories of the common insects, also a study in the methods of control of the common injurious insects in the orchard, garden and field crops. Two hours credit. Summer terms.

Course 1. RURAL-SCHOOL AGRICULTURE. This course is designed to meet the needs of those who are preparing to teach in the grades and rural schools. Practical experiments and demonstrations will be outlined for each grade. First semester; one hour lecture, four hours laboratory and field. Two hours credit.

Course 2. GENERAL AGRICULTURE. A course in which a general survey of the whole field of agriculture is taken. This course is planned especially for the students who wish a general introduction to this great industry. While Biology 1, 2 or 12 is desirable as a prerequisite, it is not necessary. Three hours credit.

Course 3. VEGETABLE GARDENING. Principles and practices used in growing vegetables. Special attention is given to the home garden. The scoring, marketing, and canning of vegetables is given special emphasis. The work has been arranged to meet the needs of those specializing in Domestic Science and Agriculture. Second semester; two hours lecture, two hours laboratory and field. Two hours credit.

Course 4. AGRONOMY. Lectures and recitations on the history, production, cultivation, harvesting and marketing of farm crops. The laboratory and field work will consist of a study of all crops adapted to this region and judging of different cereals. First semester; two hours lecture, four hours laboratory. Five hours credit.

Course 51. HORTICULTURE AND FARM FORESTRY. This course gives the student a general survey of the field of fruit and truck growing, gardening and forestry. Much of the work will be done in the field. Spring and summer terms. Three hours credit.

Course 52. POULTRY CULTURE. A general course dealing with poultry houses, yards, etc., fattening and marketing, description of breeds and varieties of poultry. Two hours lecture, four hours laboratory. Three hours credit.

CHEMICAL AND PHYSICAL SCIENCES.

J. A. YATES, Professor.
G. V. EMERY, Associate Professor.
A. T. DUNHAM, Associate Professor.
MARGARET COVENTRY, Assistant Professor.
WILLIAM MATTHEWS, Assistant Professor.
T. J. DOBROVOLNY, Assistant Professor.

The demand for teachers trained in the elements of physics, chemistry and geology is shown by the introduction of such subjects as general science in the grades and in the requirements for county certificates.

The beginning courses in the above subjects offer abundant material that one may use in teaching children. These subjects broaden the powers of the teacher, increasing her ability to direct the different types of mind found in her classes.

CHEMISTRY.

Course 1. GENERAL CHEMISTRY. This course consists of recitations, lectures and laboratory work upon the fundamental principles of this science together with the application of chemistry to various arts and industries. Among the practical subjects considered are the chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils and varnishes, water, air, fuels, and the elementary principles of chemistry involved in food preparation. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. First term, freshman year. Five hours credit.

Course 2. QUALITATIVE ANALYSIS. This course consists largely of laboratory work. Emphasis is placed upon the analysis and properties of those substances that are used in the industrial arts, as oils, pigments, paints, varnishes, fuels, and alloys. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Five hours credit.

Course 3. QUANTITATIVE ANALYSIS. This is principally a laboratory course, including both gravimetric and volumetric analysis, supplemented by lectures and recitations. The calibration of glassware and the study of the relation of chemistry to other sciences, along with the various vocations of life, are included in this course. Prerequisite, Chemistry 1 and 2. Two, three or five hours, depending on the amount of work done.

Course 10. FOOD CHEMISTRY. A special course for domestic science students. This course consists in the identification of food adulterants and preservatives, the effect of these upon the body, the analysis and relation of the different classes of foods, and includes a study of organic chemistry related to food. Prerequisite, Chemistry 1. Three hours credit.

Course 15. GENERAL SCIENCES. This course is planned for grade teachers and consists of easy demonstrations, which may be performed by the teacher to illustrate some of the scientific principles involved in the study of such subjects as air, water, fire, food, clothing, etc. Two hours credit.

Course 64. HISTORY AND METHODS IN PHYSICAL SCIENCE. This is a course of lectures given by the different teachers in the department. These lectures consist of a nontechnical discussion of the most important discoveries in the physical sciences. The applications of these principles for efficiency is emphasized. One or two hours credit according to the work done. Prerequisite, 15 hours Physical Science.

Course 60. TEXTILE CHEMISTRY. This course deals with the chemical examination and identification of the different textiles, and a brief study of dyeing. Prerequisite, Chemistry 1. Two hours credit.

Course 61. HOUSEHOLD CHEMISTRY. This course consists in the application of chemistry in the household, involving sanitation, cleaning and removal of stains. Prerequisite, Chemistry 1. Two hours credit.

Course 62. PHYSIOLOGICAL CHEMISTRY. This course consists of a study of the chemical changes involved in the cooking, digestion and absorption of foods; the chemistry of the blood and tissues of the body. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Two hours credit.

Course 63. Chemistry of Nutrition. This course consists of a study of the composition of the different classes of food, their function in nutrition, dietaries and food economy. Prerequisites, Chemistry 1 and 10, and Organic Chemistry. Two hours credit.

GENERAL GEOLOGY.

Course 40. A course in general geology, leading to three hours credit. This course is planned to acquaint the students with the relations of this subject to our industrial life.

PHYSICS.

Courses 1 and 2. High-school Physics. A study in recitation room and laboratory of the fundamental principles of physics. Course 1 covers mechanics of liquids and solids, engines, heat, ventilation. Course 2 covers the subject of magnetism, electricity, sound and light. The two courses together constitute one unit credit.

Course 37. Electric Wiring. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved circuits." One hour credit is offered this summer. This course may be elected by anyone not having four hours credit in electric wiring.

Course 39. Gas Engines II (Automobile Electricity). The practical application of electrical circuits to the modern gasoline automobile. It is devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble hunting in these parts. Two hours credit.

Course 25. Mechanics, Heat and Sound. Lectures and laboratory on the general principles involved. Forces in structures and machine parts, elasticity and ultimate strength, laws of motion, heat measurements, sound phenomena. Prerequisite, High-school Physics. Five hours credit. (N. B. Offered summers alternately with course 26.)

Course 26. Electricity and Light. Electric and magnetic circuits. Electrical machinery for power, heat and light. Primary and storage batteries. Nature of light. Laws of reflection, refraction, simple lenses and optical instruments. Lectures and laboratory. Prerequisite, High-school Physics. Five hours credit. (N. B. Offered summers alternately with course 25.)

Course 38. Gas Engines. A study of the fundamental principles of operation of internal combustion engines, such as ignition, cooling, carburetion and governing. A course valuable to one interested either in farm mechanics, industrial activities, or in automobiles. Laboratory and lectures. Prerequisite, High-school Physics. Three hours credit.

Course 43. Storage Batteries. The construction and operation of storage batteries is carefully studied. The charging of storage batteries receives special attention. The problems of repair are also considered. Storage batteries are being used more and more in electrical work, and the proper use and repair of them is of great importance to electrical workers in the fields where batteries are used. Two hours credit.

Course 40. Armature Winding. A practical course in the testing and repairing of defective and burned-out electrical machinery. Prerequisite, course 33. Two hours credit.

Course 28. Direct-current Machinery. Lectures and design. The theory of direct-current machine construction. Includes the theory of magnet design, both shunt and series and armature design. Two practical problems are given, one the design of a lifting electro-magnet, and the other the design of a direct-current motor. Two hours credit.

TEACHERS' REVIEW COURSE. A course of lectures and demonstrations covering the entire subject of physics, and especially designed for those wishing to obtain certificates. Five lecture hours per week.

Course 70. THE TEACHING OF PHYSICS. Practice and theory. Texts, materials and methods form the basis of study. Prerequisite, High-school Physics. Two hours credit.

Should there be a sufficient demand for the organization of other classes in the Chemical and Physical Sciences, arrangements will be made for giving the work desired.

COMMERCE.

E. F. SHOLTZ, Professor of Commerce.
W. S. LYERLA, Asst. Professor of Commerce.
L. C. GUFFY, Asst. Professor of Commerce.

BEGINNING SHORTHAND. A complete study of theory of shorthand. The text is completed to lesson twelve. This class is especially for those intending to continue the work in September, when the work will be started at lesson twelve. One-fourth unit.

DICTATION AND OFFICE PRACTICE. Dictation begins at sixty words and speed is increased as fast as possible. One-fourth unit.

LETTER WRITING OR COMMERCIAL CORRESPONDENCE. A drill in punctuation, capitalization, letter writing, letter forms and postal laws. One-half unit.

PENMANSHIP. Drills, forms of letters and methods. One-fourth unit.

BOOKKEEPING. Application of laws of debit and credit. Business practice. Two and one-half hours credit.

BUSINESS LAW. Study of laws governing contracts, principal and agents, master and servant, partnership, joint stock companies and corporations, etc. Two hours credit.

COMMERCIAL METHODS. Methods of teaching commercial subjects. One hour credit.

DRAWING AND DESIGN.

ELSIE LEITCH BOWMAN, Associate Professor of Drawing
and Applied Arts.

Course 1. FREE-HAND PRESPECTIVE. Instruction is given in the principles of perspective and of light and shade. The students sketch objects, interiors, exteriors and street scenes. A study of pencil sketching is made both in outline and in tone. Two hours credit.

Course 2. HISTORY OF ART. The course consists of a study of the world's masterpieces with reference to recognized principles of art as applied to architecture, sculpture and painting. Also it touches upon historic furniture, textiles and costumes, with a study of some of the principles of good line, form and color. Three hours credit.

Course 3. PRIMARY DRAWING AND HANDWORK. This course is for those who expect to teach or supervise drawing in the kindergarten and first four grades of the public schools. It includes drawing, painting, blackboard work, elementary design and construction problems suitable for children in the primary grades, with methods and a complete outline of study. Some picture study is also given. Laboratory period is required. Four hours credit.

Course 7*a*. Charcoal and Water Color. Study of form, values, color harmonies and composition by means of still life and pose drawing. Special attention is given to rapid sketching for action and proportion, and to development of pictorial art. Two hours credit.

Course 7*b*. Advanced Charcoal and Water Color. A continuation of course 7*a*, special emphasis being given to life drawing and painting. Studies suitable for illustration or for mural decoration may be made. Two hours credit.

Course 8. Intermediate Drawing. This covers the work for those who expect to teach or supervise above the fourth grade. It includes a short course in perspective, color, design and non-equipment construction work. Exercises in rapid blackboard sketches are given, picture study is continued and a course of study is planned. A laboratory period is required. Four hours credit.

Course 10. Applied Design. This is a study of the fundamental principles of design in line, mass and color. The problems developed may be applied in the arts and crafts classes. Two hours credit.

Course 11. Poster and Advertising. A study of the principles of design as applied to poster making and commercial advertising. One hour credit.

Course 12. Free-hand Drawing and Design. The first part of this course is designed to develop ability to "see" an object and to give adequate, accurate and rapid expression by means of pencil and blackboard sketches. The second part of the course is a study of the principles underlying good design—line and space composition, rhythm and proportion. Throughout this course the problems used will be those especially adapted to the needs of the industrial arts teachers. Prerequisite, Mechanical Drawing 1. Two hours credit.

EDUCATION.

D. M. Bowen, Professor.
Edgar Mendenhall, Professor of Rural Education.
Frank Deerwester, Associate Professor.
Oscar W. Alm, Principal Junior High School.
C. S. Risdon, Assistant Professor.
H. D. Ramsey, Assistant Professor.

Enlarged opportunity for work in education will be offered during the session of 1921. In addition to the regular Faculty, educators of national prominence and superintendents of wide experience will assist in the work outlined. Also, in addition to the courses outlined, special lectures on educational topics will be given during the session.

Junior College Courses: Course 1, Elementary Education; course 2, Modern Education; course 6, Social Principles in Education; course 8, Child Psychology; course 7, General Psychology; course 11, Stories and Literature; course 3, Rural Education; course 13, Tests and Measurements.

Senior College Courses: Course 51, Administration; course 52, Educational Measurements; course 55, Secondary Education; course 57, Educational Psychology; course 60, School Supervision; course 53, Rural Education.

ADMINISTRATION AND SUPERVISION.

Course 1. Introduction to Education. Required in all life-certificate courses for teachers, except the course for rural teachers. The aim of this course is to acquaint the student with educational facts which should be the common knowledge of every one engaged in education. This course also furnishes necessary groundwork for more advanced subjects in education. Three hours credit.

Course 2. MODERN EDUCATION. A course that traces the movements and influences that have brought about the present ideals and practices in education, with emphasis on current educational problems. Three hours credit.

Course 3. RURAL EDUCATION. This course is primarily for beginning teachers, and teachers of limited experience and training. The organization of the rural school, the making of the program, problems of school discipline, school-room decoration and equipment. The rural-school playground will receive due consideration. Three hours credit.

Course 6. SOCIAL PRINCIPLES IN EDUCATION. A course in educational sociology, dealing with the social laws and principles governing education. A socialization of the school, its administration, course of study, methods, and discipline. A discussion of the school as an instrument for social efficiency. Open to sophomores. Two hours credit.

Course 11. STORIES AND LITERATURE. A course designed to supply training for the work of story-telling in the kindergarten and primary grades. Practice and discussion in the art of story-telling are a part of the work. The sources of literature of the development of the myths are studied. Not only should the art of story-telling be developed in this course, but discrimination in the choice of stories for various uses of study; also the origin and meaning of myths, fairy tales and fables, and the classification, adaptation and dramatization of stories. The course is intended for those enrolled in kindergarten and primary, but may be profitably taken by any one desiring to learn the art of story-telling. Two hours credit.

Course 12. THE JUNIOR HIGH SCHOOL. Its development, aims and principles; its psychological and sociological foundations; its relation to the elementary and senior high school as an intermediate school. The problem of organizing, administering and supervising the different courses of study; the schedule and teaching force; moral, vocational and educational guidance; student activities, plant and grounds. Three hours credit.

COURSE 13. TESTS AND MEASUREMENTS. A brief course for rural- and elementary-school teachers for the purpose of acquainting them with the standard scales and tests most used. Reading, Arithmetic, Spelling, Geography, Writing and History Scales and Tests will receive special attention. Tabulating and graphing educational data so as to render it more significant to pupils and teachers will also be made part of this course. Two hours credit.

PSYCHOLOGY.

Course 7. GENERAL PSYCHOLOGY. The purpose of this course is to give the students a working knowledge of the accepted facts and general principles of psychology. In order to give a fair representation of the science as a whole, the descriptive, structural and dynamic phases of psychology are discussed. The point of view is on the whole functional, more attention being paid to what the mind does than to what it is. Discussions, outlines, readings, reports and simple experiments. Offered each semester. Three hours credit. Prerequisite for all other courses.

Course 8. CHILD PSYCHOLOGY. The aim of the course is to acquaint students with the most important established facts and principles of mental and physical growth of the child. To enable students to recognize types and individual differences among the children; to notice, interpret and deal properly with certain defects; to cultivate an intelligent sympathy with children. Two hours credit.

COURSE 9. PRINCIPLES OF EDUCATION. A course in the art of teaching, based principally upon the science of psychology. A discussion of the principles of psychology which are involved in teaching and their application in the work of the classroom, laboratory and shops. The following problems are analyzed and discussed, showing the interdependence of the various aspects of teaching method and the unity involved in mental development; attention and interest; the formation of habits; memory and the principles of memorizing; imagination, its development and use; thinking and reasoning; transfer of training; types of classroom exercises; how to study; individual differences. General psychology a prerequisite. Three hours credit.

Course 56. SOCIAL PSYCHOLOGY. A study of psycology of the origin and evolution of mental communities; the psychology of suggestion, imitation, fashion, custom, conventionality, sects, fads, crazes, mobs, and public opinion. Two hours credit.

Course 57. EDUCATIONAL PSYCHOLOGY. This course deals with the application of psychological principles to education. The laws of learning; the amount, rate and limit of improvement; the factors and conditions of improvement; mental discipline; mental fatigue; individual differences and their causes; and original tendencies of man. Discussions, outlines, readings and reports. Course in General Psychology prerequisite. Three hours credit.

Course 55. SECONDARY EDUCATION. The purpose of this course is to introduce the student to the vital problems of secondary education. The course is divided into two main parts. The first half deals with the administration of secondary schools, course of study, organization and management, social factors, school government and material equipment. The second half of the course deals with the psychology of high-school subjects; introducing the student to the most important psychological principles underlying the various subjects taught in secondary schools. Discussions, outlines, reading and reports. Two hours credit.

Course 51. SCHOOL ADMINISTRATION. A study of the larger problems of administration; the relation of the state to education; the various units of school organization, district, township, county, state and nation; the various administrative officers, their powers and duties; the teaching staff and present tendencies of education administration in America. Offered spring semester. Three hours credit.

Course 60. SCHOOL SUPERVISION. This course is intended to meet the requirements of principals, supervisors and superintendents in small cities. It deals with the organization and supervision of the elementary school. Standards for estimating efficiency of teachers, improvement of teachers in service, records, programs and means of unifying the work of teachers in various grades; grading and promotion of children; tests, examinations, etc.; the function of the recitation, study and play periods. The Training School will serve as a laboratory for students in this course. Three hours credit. Open only to students of Junior and Senior College grade.

Course 53. RURAL EDUCATION. This course will be organized for teachers of experience, principals of village and rural high schools, and supervisors of rural schools. The larger problems of rural education: (1) School and community; (2) hygiene and rural community sanitation; (3) community recreation; (4) the rural church; (5) the rural home; (6) model curricula for rural common schools and rural high schools; (7) school consolidation; (8) the district and county plan of school organization. A basic text will be used, supplemented by reading the reports of state superintendent, school surveys and other appropriate material. Three hours credit.

TRAINING SCHOOL.

CRITIC TEACHERS.

AGNES ALLENDER, Kindergarten.
LILLIAN MCLEAN, Primary.
JANE CARROLL, Primary.
NELL M. AYERS, Intermediate.
JESSIE LESSLIE, Grammar.

The training School will be in full operation during the Summer Session. Classes will be organized in all grades, from the kindergarten to the ninth grade, inclusive. The school is planned in the summer for purposes of observation rather than practice. The classes are taught by the regular critic teachers and are in session only in the forenoon. In the afternoon the critic teachers conduct a round table, discussing the problems arising during the school session. This phase of work is interesting and profitable to elementary teachers of all grades of school work.

ENGLISH.

The courses in English for the Summer School of 1921 present something of a departure from those hitherto offered for summer work. Instead of the customary grind in English composition, it is designed to devote the same time and energy to the more pleasurable study of literature. To this end, six different courses are offered in literature. Any high-school graduate may enroll in any one of these. The study of each will be correlated with some written work, wherein the essential forms of English composition will be enforced.

ERMINE OWEN, PROFESSOR.

THE EPIC (Col. 2). A presentation of types of literature merging into an intensive study of *The Lesser Epic* and *The Grand Epic.* Three hours credit. Two classes.

SHAKESPEARE (Col. 3). A study of the art and technique of the world's greatest dramatist as illustrated in "Hamlet," and other plays.

Course 60. THE GREEK DRAMA. A study of both the representative masterpieces and the evolution of the Greek drama—the mightiest original literary achievement of the human intellect. Æschylus, Sophocles, Euripedes, Aristophanes. Three hours credit.

MISS ANDREWS.

SHAKESPEARE (Col. 3). A study of the art and technique of the world's greatest dramatist as illustrated in "Richard III" and other plays.

JOURNALISM (Col. 58). News gathering, reporting and correspondence, the value of news, the feature story, purpose and content of all styles of journalistic writing. Three hours credit.

MISS LATHROP.

Course 61. MODERN DRAMA. A course in the appreciation of the modern drama. A short review of the evolution of the drama will be given for those who have not had course 53. Some of the authors: Ibsen, Maeterlinck, Phillips, Belasco, Zangwill, Kennedy, Tarkington, Wilson, Fitch, Herne, Howard, Miller, Burnett. Three hours credit.

HIGH SCHOOL.

MISS ANDREWS.

V. ENGLISH AND AMERICAN CLASSES.

MISS LATHROP.

VI. COMPOSITIONS: WORD STUDY, DEBATE, THE SPEECH.

FOREIGN LANGUAGES.

SAMUEL J. PEASE, Professor.
ERNEST BENNETT, Assistant.

FRENCH.

Course 1. ELEMENTARY. Fraser and Squair's French Grammar and Lavisse's Histoire de France. Thorough work in the foundations of the language. Three hours.

NOTE: Two additional hours by correspondence (course 1*b*) is strongly recommended, so as to give the equivalent of one semester of College French. Course 1*b* will be offered in the August session if there is sufficient demand.

Course 2. For those who have had one year in high school or one semester in college. Reading of one easy work of fiction and one play; grammar and simple composition exercises; much oral practice. Fraser and Squair's Grammar. Three hours.

ADVANCED FRENCH READINGS. About three hundred pages of standard texts used in second and third year college work. Reading of one work of fiction, according to the needs of the students enrolled. Discussion in French of the texts, oral and written summaries; irregular verbs and subjunctives; constant attention to pronunciation. Three hours.

Course 11. INTERMEDIATE COMPOSITION. Two hours. Or—

Course 63. ADVANCED GRAMMAR AND COMPOSITION. Three hours. Especially helpful to those who are preparing to teach French.

LATIN.

Course 1*b*. Smith's Latin Lessons. Derivation, relation of Latin to English. Corresponds to last half of first-year Latin in high school. Three hours credit.

Course 2*b*. CÆSAR 11, with composition. Three hours credit. Two hours additional by correspondence.

Course 61. METHODS FOR TEACHERS. Observation reports, lectures, charts. Two hours credit.

Language 72. LANGUAGE SCIENCE. Development of the language function in the individual. Capacities and adaptability of children and adults at varying ages. The factors of linguistic development. Relation to the other functions of the mind. Results of different types of curricula. Place of the ancient and modern languages in the development of the language function and of the modern school. Three hours. No prerequisite, but should be preceded by Child Study and Educational Measurements. Especially for superintendents, principals, and teachers majoring in Education, English or Foreign Languages.

SPANISH.

Course 1*a*. Elementary. Hills and Ford's First Spanish Course and Pittaro's Spanish Reader. Three hours. The remainder of course 1 (course 1*b*) should be taken at the earliest possible moment, either by correspondence or, if there is sufficient demand, in the August session.

South American Spanish. Three hours. The amount and character of the work will depend on the needs of the class. Much oral practice.

Course 11. Intermediate Spanish Composition. Two hours. Or—

Course 63. Advanced Composition and Grammar. Careful attention to pronunciation. Three hours.

SENIOR HIGH SCHOOL.

French. High-school students may, for sufficient reason and provided their capacities permit, be enrolled in classes with college students and be given high-school credit.

LATIN.

SENIOR HIGH SCHOOL.

Latin II. Second half of first year Latin. One-half unit. Smith's Latin Lessons.

Cæsar II, with composition. One-half unit.

GEOGRAPHY.

Eulalia E. Roseberry, Professor.
Bessie Ashton, Assistant Professor.

The department has been unable to fill the demand for teachers of geography. The demand is not only for teachers in grades and high schools but also for teachers in teachers' training schools. No other subject offers greater opportunities than geography.

Course 1. Physiography. Designed for college students who desire scientific knowledge of the earth, its relations, physical features, and their origin and development. The work is supplemented by laboratory and field work. Economic controls are given special attention. Courses required in grade teachers' course. Offered each semester. Never in the history of the world has a knowledge of these factors been so desirable as at the present time. Five hours credit.

Course 1*b*. Physiography. The course is designed for college students who have had one year's work in high-school physical geography. The course embraces the scope of work in course 1, in review. Three hours credit.

Course 2. Industrial Geography. This course includes, first, a brief study of the geographic basic controls of climate, soil and topography. The course encompasses the origin, history and development of agriculture, textiles, food products, minerals and manufacture of machinery as controlled by geographical factors. This course is especially valuable for the grade teacher, and is particularly designed to correlate with the industrial courses. Three hours credit.

Course 3. Geography of American History. This course is designed especially to correlate with American history courses, and consists of a study of geographic conditions which have influenced the course of American history and of their importance as compared with one another, and with nongeographic factors. Special attention will be given geographic factors influencing the recent war. Three hours credit.

Course 4. PRIMARY GRADE WORK. The teacher in the primary grades must, in order to give the most efficient service, have a knowledge of geographic control far beyond that which is necessary to give the pupil. This course is designed especially to give necessary knowledge to the teachers of nature study and of primary grades, and for those doing departmental work in geography. The work consists largely of the selection and adaptation of material best suited to first four grades and to the method of presentation. Two hours credit.

Course 5. GRAMMAR GRADE WORK. This course encompasses, first, a study of basic geographic controls, and second, subject matter and methods for the grades above the fourth, and is designed for grade and rural teachers and those doing departmental work in geography. The problem method in geography is given special attention. Two hours credit.

Course 6. COMMERCIAL GEOGRAPHY. This course is organized to give the student a scientific knowledge of the three distinctive sets of controls—the natural, the human, and the economic. It correlates not only with the other commercial courses, but with the industrial subjects as well. Three hours credit.

Course 51. SOUTH AMERICA. This course encompasses the following topics—surface features, climate, resources of the continent in general, also the historical background of the republics; the factors upon which rest the commercial and industrial development of the various nations; the basis and character, present and future, of trade between the United States and South America; what opportunities there are in South America for Americans. Three hours credit.

Course 52. GEOGRAPHY OF EUROPE. Every teacher should have a knowledge of the elements underlying the relationship existing between ourselves and the nations of Europe. Our increased interest in the European nations demands that not only the teacher must have this knowledge but should be able to teach it to the future voters, and statesmen of our nation. This course has been organized for the purpose of putting the teachers in touch with subject matter in such manner that they may become as familiar with the situations in the countries of Europe as with those of the United States. Our new responsibilities demand that our teachers must give more attention to this problem than they have in the past. Three hours credit.

HIGH SCHOOL.

Course 4. COMMERCIAL GEOGRAPHY. This course is designed to give the high-school student a knowledge of the geographic basis of commerce. It consists of text work, library reading, and the working out of geographic commercial problems. One-half unit credit.

HISTORY AND SOCIAL SCIENCES.

G. W. TROUT, Professor.
O. F. GRUBBS, Associate.
JOHN H. BOWERS, Ph. D., LL. B., Associate.
LILLIAN LUEHRS, Ph. B., Assistant.

The department is anxious to serve the needs of the teachers of Kansas and is doing all in its power to that end. Since our Summer School is to run six days a week, it will be necessary to offer principally two-hour courses. In some instances where that is not practical, we will offer the four-hour courses.

The following courses will be offered:

Course 58. SOCIOLOGY. An introductory study of the nature, function and development or progress of society. The aim is to familiarize the student with society and some of its problems and cultivate a desire to aid in the solution of these problems. Two hours credit.

Course 59. APPLIED SOCIOLOGY. In this course we endeavor to apply the principles of sociology to present-day problems. Course 58 is a prerequisite. Two hours credit.

Course 57. TEACHING HISTORY. This course is offered to all college students who expect to teach history. It is a careful survey of why we study history, how to study history, and how to teach others to study history. Two hours credit.

Course 61. PARLIAMENTARY LAW AND PRACTICAL LEGISLATION. This course is intended to prepare the student to organize and preside over deliberative bodies with order and decorum. Also to inform him of the actual methods employed in law-making. Two hours credit.

Course 67. LATIN AMERICA. A brief study of the history and traditions of our neighbors to the south—Mexico, Central and South America, with emphasis upon their social, racial and economic development, and their relation to Europe and to the United States. Two hours credit.

Course 52. ECONOMICS A brief examination of the principles and problems of production, consumption and distribution. Two hours credit.

Course 70. EUROPE FROM 1870 TO DATE. This course is to take up the political problems of Europe since the formation of the German empire and study these in reference to the Great War. Two hours credit.

Course 63. AMERICAN HISTORY II. This course covers the period from 1750 to 1829. It is a study of those forces and events which helped to create a national ideal and a national spirit. It deals with those contributions and political problems from within and from without which tended to weld our people into one sovereign state. Two hours credit.

Course 64. AMERICAN HISTORY III. This course is a study of the difficulties and dangers threatening the life of a nation, together with the forces that contributed to our marvelous progress. It covers the period from 1829 to date. Two hours credit.

Course 51. INDUSTRIAL HISTORY. A careful study of our natural resources, growth or population, expansion of territory; the invention of labor-saving machinery and legislation upon the industrial growth and development of our country. Two hours credit.

Course 18. SOCIOLOGY. An introductory study of the nature, function and development or progress of society. The aim is to familiarize the student with society and some of its problems and cultivate a desire to aid in the solution of these problems. Three hours credit.

Curse 53. POLITICAL SCIENCE—COMPARATIVE GOVERNMENT. In this course we study the theories and functions of the modern state as exemplified in the leading nations of the world. Also careful observation of likenesses and differences of these states. Offered three hours per week during second semester of junior or senior year, college course. Three hours credit.

HIGH SCHOOL.

Course 2. ANCIENT HISTORY. This course is given to the study of Rome through her rise and fall, and also the transitional period from 476 A. D. to the death of Charlemagne, 814. One-half unit credit.

Course 4. MODERN HISTORY. This course takes up the Renaissance, Reformation, revolution, social life of the times, rise and growth of constitutional governments, with the fall of absolutism. One-half unit credit.

Course 6. CIVICS. This course is to give the student a thorough understanding of the principles and practical workings of our government and prepare for intelligent citizenship. One-half unit credit.

Course 8. ENGLISH HISTORY. A short course based upon Cheyney's text, to aid pupils in understanding the basis of many of our modern institutions which are otherwise not clear in the student's thinking. One-half unit credit.

Course 7. ELEMENTARY ECONOMICS. In this course attention is given to the fundamental principles of economics, with special work assigned to students suited to that course, such as rural economics, and social problems of city and farm. In our age of political, social and economic problems, this course is indispensible and lays well the foundation for further study in economics and society. One-half unit credit.

Course 5. AMERICAN HISTORY. This course starts with the Civil War period and covers the period to date. Special emphasis given to the cause of the Civil War, reconstruction, industrial, social and political progress during the period. One-half unit credit.

HOME ECONOMICS.

ZOE WOLCOTT, Professor of Home Economics and Joint Director.
AGNES SAUNDERS, Professor of Home Economics and Joint Director.
*HENRIETTE PRIBNOW Assistant Professor.
ANNA MARRIOTT, Assistant Professor.
EDITH CASSEDAY, Assistant Professor.
EVELYN METZGER, Assistant Professor.
JANE CAPE, Assistant Professor.
LOUISE C. JORDAN, Assistant Professor.

FOODS AND NUTRITION.

Course 1. ELEMENTS OF COOKERY. This course is planned for students who have not had a course in food preparation in high school. It develops skill in the technique of cookery, and takes up a thorough study of foods; kinds, growth, preparation for market, composition, digestibility and fuel value. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 2. FOODS AND COOKERY. This is a continuation of course 1. The two courses cover a study of beverages, cereals, vegetables, batters and dough, meats and poultry, fish, eggs, milk, and cheese. Following this scientific study of foods, preliminary work in serving and making menus is taken up. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 1*a*. TECHNOLOGY OF COOKERY. Courses 1*a* and 2*a* are planned for those students who have had the equivalent of a good two-year high-school course in foods and cookery. It deals with the more difficult problems of the technique of cookery and with the principles underlying the cookery of all types of foods. Much time is spent on efforts to give the students the viewpoint of a teacher of cookery. The student's work during these courses will give a content sufficient for a teacher's background in foods and cookery and the best methods of presenting the work in elementary and secondary schools. Three hours credit. A fee is charged to cover materials used in laboratory.

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* On leave of absence.

Course 3. PRESERVATION OF FOODS. This course includes the study of food preservation. Canning and preserving of fruits, jellies, conserves, marmalades and pickling, canning of vegetables. One hour credit. A fee is charged to cover materials used in laboratory.

Course 5*a*. HOME COOKERY AND TABLE SERVICE. The purpose of this course is to give opportunity for practice in home cookery, fancy cookery, and the serving of both formal and informal meals. Two hours credit. A fee is charged to cover materials used in laboratory.

Course 5*b*. ELEMENTARY NUTRITION. This course describes very simply the essentials of an adequate diet and the nutritive properties of common food materials. The application of such knowledge to the feeding of individuals and family groups is discussed with special reference to limitations of cost. Three hours credit.

Course 51. EXPERIMENTAL COOKERY. This is a quantitative study of cooking processes, comparative study of recipes, and the cost of materials involved. Relative values of various food products common in the present-day markets. Work in demonstrations will be given along with this course. Two hours credit. A fee is charged to cover materials used in laboratory.

Course 53. DIETETICS AND NUTRITION. The course deals with the biological analysis of foodstuffs and presents the application of the fundamental principles of human nutrition under varying physiological, social and economic conditions. Quantitative and qualitative studies of food values are made. Four hours credit.

Course 55. DEMONSTRATION. This course offers a study of cookery demonstration, and equips the student to give instructive demonstrations. The aim of this course is to fit the teacher to do community work, as well as classroom work. Two hours credit. Fee charged to cover materials used in laboratory.

Course A. COOKERY. This course is planned for students not majoring in Home Economics. The course is purely practical and includes the preparation of vegetables, fruits, cereals, meat, eggs, bread, cakes and pastry; also, work in canning and preserving. Attention is given to food combinations, place in menu and cost. A laboratory fee is charged. One hour credit.

TEXTILES AND CLOTHING.

Course 1. SEWING AND GARMENT MAKING. This is primarily a teacher-training course designed to teach the fundamental elements of sewing to develop technique, to present suitable problems in single-garment construction and methods of teaching such problems, and to develop a sense of comparative values in materials, labor, and time. Three hours credit. A fee is charged.

Course 2. This is a continuation of course 1. Greater emphasis is placed upon developing a freer use of commercial patterns by alterations, and upon the principles of fitting and good lines. The garments made in the laboratory are a middy, tailored skirt and tailored linen or cotton dress. Three hours credit. A laboratory fee is charged.

Course 1*a*. TECHNOLOGY OF SEWING. This course is planned for those who have had one or more years of sewing in the high school. It deals with the more difficult problems of the technique of sewing. Considerable time is spent in efforts to give the students the viewpoint of the teacher of sewing, and also the best methods of presenting the work in elementary and secondary schools. Three hours credit.

Course 3. TEXTILES. This course deals with the elementary problems of textiles and is planned for life-certificate students. Some attention is given to manufacturing methods as a basis for the following work of the course, but emphasis is placed upon the study of standard materials, budgets, and the care and hygiene of clothing. A fee is charged to cover materials used in laboratory. Two hours credit.

Course 6. DRESSMAKING. Commercial patterns, the proportions of the human form, the application of principles of design and color to the gown, and the finishing of waists and gowns are studied in this course. The problems are a waist, a woolen or worsted dress, and a silk or lingerie dress. A fee is charged to cover material used in the laboratory. Four hours credit.

Course 7. NEEDLECRAFT. This course is a study of different types of stitches in conjunction with their most appropriate use in definite problems. Original designs are developed in harmony with material and technique. Fine examples are studied for the development of taste. Two hours credit.

Course 51. CHILDERN'S CLOTHING. This course includes the planning, purchasing, and making of children's clothing, considering hygiene, comfort, beauty and practicability. In the laboratory special emphasis is laid upon machine work, use of machine attachments, short cuts and easy decorative schemes. A fee is charged. Two hours credit.

Course 52. ADVANCED DRESSMAKING. This course deals with the characteristic use of silks and velvets. The problems are an afternoon gown and an evening gown. A fee is charged to cover materials used in the laboratory. Two hours credit.

Course 53. ADVANCED TEXTILES. This course presents the foundation principles of the textile industry, special emphasis being placed upon early methods as an interpretation of the present methods of manufacture. The student is prepared to present this work in a graphic way and to become an intelligent judge of the quality and suitability of the various fabrics used for personal and household purposes. A fee is charged to cover the materials used in laboratory. Two hours credit.

Course 54. MILLINERY. This course deals with the selection of materials, the making and covering of frames, the fitting and trimming of hats, the making of flowers, and the renovating of millinery materials. Emphasis is placed upon the proper selection of hats, and their suitability to the wearer and the occasions for which they are intended. A fee is charged to cover material used in laboratory. Three hours credit.

Course A. MILLINERY. This course is elective to students not registered in the Home Economics department, and aims to teach some of the elementary principles of millinery. Buckram frames are prepared and seasonable hats with trimmings are made. A fee is charged to cover material used in laboratory. Two hours credit.

HOUSEHOLD AND INSTITUTION MANAGEMENT.

Course 9. HOUSEWIFERY. This course treats of kinds of service needed in various parts of the household, and the systematic planning of the daily routine; labor-saving appliances, repairing and renovation; household efficiency in reference to housekeeping methods. Two hours credit.

Course 52. HOUSEHOLD MANAGEMENT. General management of the home is studied in this course. Care of the house; values in furnishings; investigations and discussion which will secure an intelligent judgment of expenditures involved in housekeeping; rent, fuel, light, water, furniture, and the cost of living; sanitation and the prevention and removal of unsanitary conditions. Two hours credit.

Course 58. This course is made up of lectures, conferences, observations and practice. The practice work consists of the preparation of food in large quantities, catering for entertainments, school lunches and banquets. A study is made of room plans, equipment, arrangement of menus, problems in connection with the serving of food, employees, food economics, and waste control, and the purchase of food in large quantities. Visits are made to local institutions such as hotels and hospitals. This course is given in the College cafeteria. Three hours credit.

Course 59. LUNCH-ROOM MANAGEMENT. This is a course for students who wish to prepare for lunch-room management. A study is made of the scientific management and their application to lunch rooms; charting, time and motion studies, standardization of equipment and processes, making of schedules for employees, score cards, record keeping, etc. A trip to Kansas City for the purpose of visiting and inspecting various types of lunch rooms, wholesale houses, etc., is advised. Two hours credit.

Course 60. HOUSEHOLD ADMINISTRATION. From six to ten weeks experience as manager and helper in a household of senior students. Four hours credit.

HOME ECONOMICS EDUCATION.

Course 4 and 5. METHODS. This is a special methods course dealing with administrative problems connected with home economics subjects in the public schools. The course includes the making of courses of study throughout the grades and high school, cost and planning of equipment, the correlation of these subjects with other subjects, and the educative value of the courses, and disciplinary problems. Three hours credit.

Course 6. Supervised teaching in Home Economics in the junior high school. Three hours credit.

Course 7. HOME ECONOMICS FOR RURAL-SCHOOL AND GRADE TEACHERS. This course is planned for rural-school and grade teachers and has for its aim the possibilities of instruction of this type in schools where the work has not been developed as distinct from other subjects in the curriculum. Three hours credit.

Course 8. FOOD HYGIENE FOR RURAL-SCHOOL AND GRADE TEACHERS. The course is designed especially for rural-school and grade teachers and covers the essentials of diet in relation to health. Special emphasis is laid on causes and treatment of malnutrition of children and those phases and factors which determine the child's nutrition and health. Three hours credit.

Course 51. FOOD HYGIENE EDUCATION. This course deals with the teaching of foods in relation to health. It includes a survey of methods to overcome malnutrition; to interest pupils and teachers in health work; to correlate nutrition with academic and vocational subjects, and to secure coöperation of all agencies to develop and maintain health standards. Three hours credit.

Course 61. METHODS IN SECONDARY VOCATIONAL HOME ECONOMICS. This course considers the relation of home economics to education; the methods of teaching; relation to high-school curriculum; the planning of lessons and courses of study suitable to the methods and purposes of home economics; studies and experiments with materials and subjects leading to operation involving household occupations in preparation for organization of project work. Three hours credit.

Course 62. SUPERVISED TEACHING. Practice in planning and presenting of courses, conferences and critiques. Three hours credit.

Course 63. SEMINAR IN HOME ECONOMICS EDUCATION. This course includes the study of problems in administration, organization, materials and equipment. Two hours credit.

Course 64. ORGANIZATION OF TEACHER TRAINING IN HOME ECONOMICS. A consideration of the problems in organization of home economics for all-day, part-time, and evening classes; currucula, courses of study, and preparation of teachers for the various types of schools will be treated. Two hours credit.

Course 65. ADMINISTRATION AND SUPERVISION OF VOCATIONAL HOME ECONOMICS. This course is planned to meet the needs of supervisors of home economics. The topics treated are legislation, types of schools, supervisory plans, and courses of study. Two hours credit.

Course 66. HISTORY OF THE FAMILY. This course includes the history of the family from early ages to the present time; the industrial revolution and its effects upon the family life, and an examination of the present situation and tendencies as they affect the life of the American family. Three hours credit.

Course 67. EDUCATION OF WOMEN. Women's work and her industrial and economic conditions are studied with reference to the home and society. Opening of occupations and professions to women; a study of modern problems of women, and the home, suffrage, education, economic function of women and the family. Two hours credit.

RELATED ART.

Course 5*a*. PRINCIPLES OF DESIGN. The study of the principles of design, with studio practice in the structure of pattern, space filling, and the use of color and value. The application in design is directly related to definite problems. Credit two hours.

Course 5*b*. DESIGN. This course is for students who wish to continue the study of design. The application is directly related to definite problems in various mediums such as batik dyeing, wood block printing, stenciling, etc. Credit two hours.

Course 24. HOME FURNISHING. In this course the decorative phase of design is studied in relation to the repairing, refinishing and upholstering of furniture, and the making of things useful and beautiful out of simple materials and materials frequently wasted. Credit two hours.

Course 25. INTERIOR DECORATION. This is the study of the principles of design and color in relation to the arrangement and furnishing of a home. A study is made of the history of furnishing so that the student may learn what is good in design in color, for the development of taste in selection. Credit two hours.

Course 51. HOUSEHOLD ARCHITECTURE. The designing and planning of the small modern house. Drawings are made of floor plans, front and side elevations, and a perspective sketch to show artistic planting. Original designs and working drawings are made for built-in furniture and other conveniences. A special study is made of laboratory equipment and its arrangement. Credit, two hours.

Course 52. HISTORY OF FURNITURE. This course is planned to help the student to understand the history of furniture through the important period styles so that he may more easily make selections from designs in the market with an appreciation of modern requirements. One hour credit.

Course 53. HISTORY OF COSTUME. This course is planned to help the student appreciate the history of costume and its relation to the development of modern design. One hour credit.

Course 56. COSTUME DESIGN. The study of the rhythm and grace of line in the figure and costume. Costumes and colors for different types and complexions. Color and texture combinations in various materials. Sketching from gowns, hats and original designs. Lectures and studio practice. Two hours credit.

INDUSTRIAL AND APPLIED ARTS.

A. H. WHITESITT, Professor.
F. H. DICKINSON, Assistant Professor.
C. R. WASSER, Assistant Professor.
H. V. HARTMAN, Assistant Professor.
L. A. REPPERT, Assistant Professor.
R. W. ERSKINE, Assistant Professor.
C. F. KOPP, Assistant Professor.

SPECIAL PROFESSIONAL COURSES.

Course 3. ORGANIZATION AND ADMINISTRATION OF INDUSTRIAL ARTS. Principles underlying the organization of shop courses. Organization of industrial and vocational schools. Relation of industrial arts to other school courses; administration and supervision of industrial arts; shop layouts, planning equipment, specifications and cost of equipment. Two hours credit.

WOOD WORK.

Course 1. BENCH WORK. Demonstrations and lectures and discussions on methods of teaching. A course which aims primarily to give training in the technical processes as a basis for teaching in the Junior High School. An effort is made to balance theory and practice. Three hours credit.

Course 5. ELEMENTARY WOOD TURNING. A study of the lathe, tools used, and processes involved in turning between centers; faceplate work; polishing and finishing. Two hours credit.

Course 7. ADVANCED TURNING. Chiefly faceplate and chuck work; problems involving accurate fitting of parts, such as boxes and mirror frames; built-up and inlay work. Finishing, staining, dyeing and polishing. Two hours credit.

Course 9. FURNITURE AND CABINETMAKING. Construction of period furniture with modern adaptation, including sawing, upholstering, inlaying and veneering. A course restricted to those with a high degree of manipulative skill and a keen appreciation of good design. Three hours credit.

Course 15. ELEMENTARY WOOD FINISHING. The finishing of a series of small panels of different kinds of wood; a study of different kinds of stains, each in relation to the character of the wood, its formula and its application; the relative values of oil, shellac, wax and varnish under varying conditions. Some work in the finishing of small projects. Two hours credit.

Course 59. ADVANCED WOOD FINISHING. A course designed to meet the demand for a more exhaustive knowledge of the subject than course 13 affords. It deals chiefly with French polishing, varnishing and rubbing. It includes correct preparation of surfaces for securing best results; making and correct use of polishing pad, formulas for polish and their application. Two hours credit.

Course 19. CARPENTRY. A study of the theory of roof framing with practical applications. Building of simple structures as garage or small house; placing and leveling sills and joists, erecting and plumbing walls, cutting and placing rafters. Outside finish, shingling, setting frames, siding, etc. Three hours credit.

Course 21. Mill Work. This course emphasizes the practical work of power machinery as, universal saws, band saws, jointers, planers, mortisers, shaper, tenoner, belt sander, etc. Shop organized as a producing factory in which economy of production is the dominant feature. Open only to those of proven ability. Three hours credit.

Course 23. Technology of Woodworking. A study of the structure and properties of wood; characteristics and distribution of the common species; growth and care of woods in the forest; source of supply; lumbering and saw-milling. Wood-working tools; fastenings—nails, screws, bolts; cabinet hardware; glue—kinds, strength and manufacture. One hour credit.

Course 25. Saw Filing. Filing, setting, swedging and gumming of different kinds of saws; makes as to characteristics and quality; files—kinds and use; knife tool sharpening and adjusting. One hour credit.

Course 57. Pattern Making. Relation between pattern and casting. Shrinkage of different metals; meaning of draft, finish, cores. Pattern construction and the relation of pattern making to molding and founding. Two hours credit.

PRINTING.

Experience has shown that printing can be made a vital force in the teaching of English. This concrete application of the rules of good English fixes them in the pupil's mind in such a way that he seldom forgets their use.

Printing being the fifth industry in the United States in the number of people engaged, the public schools are justified, if not under obligation, to make provision whereby every boy may learn something of this great industry. Its value as a prevocational as well as a vocational subject has been proven.

The following new equipment has just been installed, which enables us to print "The Manualite" and much of the school printing in our own shop: Model 8 linotype; Cottrell two-revolution, 38-inch, cylinder press; two stones; proof press; about thirty fonts of display type, and various borders and ornaments. This makes our instruction more practical and gives us a much broader scope of the printing art.

Course 1. Printing. Elements of printing, such as the study of type, printers' measure, type cases, proof reading and the press. Practical work in general typesetting and operating the press. Two hours credit.

Course 2. This is a continuation of course 1, in which design is emphasized. Practical work is offered in color printing, selection of paper stock, composition of letterheads, envelope forms, business cards, programs, and books, and the making of wood cuts. Throughout the course there will be discussions on what to print in our public schools and how to proceed. Prerequisite, course 1. Two hours credit.

Course 4. Linotype Mechanics. This will be a continuation of course 3, with special emphasis placed on the mechanism of the linotype in general. Prerequisite, courses 1 and 2. Two hours credit.

Course 3. Linotype Operation and Elementary Mechanics. This course will deal largely with the operation of the linotype, giving only the mechanical instruction required in operation. Special attention will be given to correct keyboard fingering, and development of speed. Two hours credit.

METAL WORK.

Course 2. Elementary Forging. Care of the fire, selection of coal and making of coke; proper use of tools; heats for different materials; exercises in drawing out and upsetting; welding, bending, forming, fullering and swedging. Two hours credit.

Course 10. ELEMENTARY MACHINE SHOP PRACTICE. Chipping, filing. laying out, centering, drilling, scraping, tapping and threading with hand dies. Practice in the use of lathes, planer, shaper and drill press. Two hours credit.

Course 12. GENERAL MACHINE SHOP PRACTICE. This course is a continuation of course 4, designed for the student's use in machine construction, millwrighting and general repair work. Machine construction is the making of small machinery, instruments and tools, the cutting of multiple threads on the lathe; also square, worm and acme threads; the use of the universal milling and grinding machines, such as using the dividing head, plain and different indexing, vertical milling and slotting; making spur, spiral, bevel and worm gears, and plain and cylindrical grinding on the grinder. Prerequisite, course 10. Two hours credit.

Course 50. TOOL AND DIE MAKING. Tool and die making is more advanced work in shop practice. In this course mathematics plays an important part. The practical part consists of the making, annealing, hardening and tempering of all milling machine tools or cutters and of the hand tools, such as mandrels, taps, dies, reamers, drills and all necessary small tools. Internal grinding is also given, and the making of jigs. Die making consists of the making, annealing, tempering, etc., of dies and punches for practical use on our punch press. Prerequisite, courses 10 and 12. Two hours credit.

Course 14. SHEET METAL. An elementary course involving simple problems which give practice in the processes of cutting, wiring, grooving, riveting, seaming, forming, edging, filing and soldering. The tool and machine processes used in the construction of these problems is the basis of the mechanical part of the sheet-metal trade. Two hours credit.

Course 1*b*. AUTOMOBILE MECHANICS. There is an increasing demand for men qualified to teach automobile work, gas engine, etc. This course is designed for Manual Training teachers who expect to teach this work. A combination of theory and practice in the repair of the automobile with special emphasis on the outlining of courses, equipment, method of teaching, etc. Two hours credit.

Course 7. OXYACETYLENE WELDING. A course which gives practice in the use of the oxyacetylene torch for cutting and welding of automobile castings, frames, etc. Two hours credit.

Course 8. VULCANIZING. This course includes the actual repair of tubes and casings, such as blow outs, rim cuts, tread building, etc. The equipment includes a standard Miller vulcanizer for all sizes of casings and for inner tubes and an ample supply of small tools. Two hours credit.

INDUSTRIAL ARTS DRAWING.

Course 1. ELEMENTARY MECHANICAL DRAWING. A thorough grounding in the fundamental principles underlying good working drawings and ability to execute neatly and accurately. One hour credit.

Course 2. FREE-HAND DRAWING AND DESIGN. The first part of this course is designed to develop ability to "see" an object and to give adequate, accurate, and rapid expression by means of pencil and blackboard sketches.

The second part of the course is a study of the principles underlying good design—line and space compensation, rhythm and proportion. Throughout this course, the problems used will be those especially adapted to the needs of industrial arts teachers. Prerequisite, Mechanical Drawing 1. One hour credit.

Course 3. PROJECTION DRAWING. Analytical study of orthographic projection of lines, points and solids. Fundamentals of projection are emphasized in problems dealing with revolutions, sections, intersections and surface developments. Pattern development suitable for use in sheet-metal work.

A study of pictorial projects such as isometric, oblique or cavalier and cabinet projection. Prerequsite, course 1. One hour credit.

Course 4. FURNITURE DESIGN. The dominating purpose is to stimulate in the student a conception of furniture as an expression of beauty. A series of problems from the design of simple chairs and tables to more complex types of furniture. Emphasis upon period types with modern adaptations. One hour credit.

Course 5. ELEMENTARY MACHINE DRAWING. A course to familarize the student with commercial drafting-room practice. Free-hand sketches from castings and machine parts; detailed and assembled drawings. One hour credit.

Course 60. ADVANCED MACHINE DRAWING. A course which deals largely with the theory applied in practical work in the transmission of power by means of belt and rope drives, cams, crank motions, and gears. One hour credit.

Course 65. DESCRIPTIVE GEOMETRY. A course intended chiefly for those who desire to specialize in mechanical drafting. Solutions of problems relating to point, line and surface, with intersections and developments and their application to practical shop problems. Two hours credit.

Course 12. ELEMENTARY ARCHITECTURE. A practical course in reading and understanding house plans. The course deals directly with the requirements of the prospective home builder. A study is made of a typical plan which will involve the essential elements of a modern home, one- and two-story, with reference to location, lot, finance, suitable plan, arrangement of rooms for convenience, light, sanitation and heat, materials and cost. Prerequisite, course 10. One hour credit.

Course 62. ARCHITECTURAL DESIGN. The designing of a modern residence with reference to its location, plan, convenience, sanitation, heating, lighting, and materials. Working plans and elevations, with detail drawings of special interior and exterior constructions. The instructions must conform to the actual practice in building operations. Each student is expected to design a house which he would build for himself. Other constructions, as schoolhouse, barn, etc., may be substituted or included. Prerequisite, course 12. One hour credit.

MATHEMATICS AND APPLIED MECHANICS.

J. A. G. SHIRK, Professor.
C. O. VAN DYKE, Associate Professor.
L. E. CURFMAN, Associate Professor.

College courses in both pure and applied mathematics will be offered during the summer term. Teachers of mathematics may continue their mathematical preparation along either or both of the lines indicated. There is a demand for the introduction of more practical topics into the high-school subjects, and the courses in applied mathematics contain much that may be used in the regular high-school work. Mathematics teachers should know enough of the field of mathematics to give them a feeling of pride in their chosen subject. This necessitates constant study in the more advanced mathematical subjects, and also in the practical application of mathematics. The aim of mathematical instruction is brought out in every class, so that each correlates properly with all that has preceded it.

COLLEGE COURSES.

Course 1. Plane Geometry. The general properties of plane rectilinear figures; the circle and the measurements of angles; regular polygons; solution of numerous original exercises and practical problems. Open only to students not offering geometry for entrance. Three hours credit.

Course 2. Solid Geometry. Elements of solid geometry; properties and measurements of surfaces and solids. Open to all students not offering solid geometry for entrance. Two hours credit.

Course 3. Advanced Algebra. This course corresponds to the work of Algebra III of a high school, and is open only to those students who have not taken Algebra III in their high-school course. It includes a review of linear and quadratic equations, radicals, involution, evolution. progressions, logarithms, and imaginaries. Two hours credit.

Course 4. College Algebra. Rapid review of elementary algebra; graphic representation; complex numbers; series, logarithms; theory of equations; Horner's method. Three hours credit. Prerequisite, one and one-half units of High-school Algebra, and one unit of Geometry.

Course 5. Plane Trigonometry. The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two hours credit. Prerequisites, two units of High-school Mathematics.

Course 6. Analytical Geometry. The straight line; circle; elements of porabola, ellipse and hyperbola; polar coördinates; higher plane curves; elements of solid analytical geometry. Five hours credit. Prerequisite, courses 4 and 5.

Course 7. Calculus. Differential calculus; fundamental principles; derivatives; rates; applications to mechanics; maxima and minima; indeterminates; integral calculus; integration; definite integrals; applications to lengths, areas and volumes; moment of inertia; fluid pressure. The student is taught the use of tables of integrals in performing integrations. Five hours credit. Prerequisite, course 6.

Course 8. Industrial Mathematics. This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks; mensuration of plane and solid figures; logarithms; the trigometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and include the mathematics of woodworking; house building; power transmission; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit. Prerequisite, two units of High-school Mathematics, one unit of Physics, or an equivalent experience in mechanic arts.

Course 9. Vocational Mathematics. This course is designed especially for women, and contains samples of problems from all occupations that women are likely to enter, from the textile mill to the home. Food computations; house construction; house furnishing; dressmaking and millinery; arithmetic for office assistants, sales girls, cashiers and nurses; and a thorough drill in the metric and English systems of weights and measures. Three hours credit.

Course 10. Teaching of Elementary Mathematics. Essential features of courses in mathematics as far as the eighth grade. Principles and methods of teaching arithmetic and the allied mathematics of the elementary schools. The course will be presented with outlines with reference to historical material and the proper balance of abstract and concrete work. The aim is to study those topics likely to be introduced into the curricula of the first eight grades and to show how to relate to the child's everyday life and his future needs. Three hours credit.

Course 13. STRENGTH OF MATERIALS. A study of the physical properties of materials used in the construction of buildings and machinery; the stresses and corresponding deformations of these materials in tension, compression, and shear; the principles underlying the investigation and design of pipes and cylinders carrying internal fluid pressure; riveted joints; beams and columns; shafting and reëinforced concrete; resilience of materials. Two hours credit. Prerequisite, course 5 or 8.

Course 20. MECHANISM. A study of the motion of machine parts and of methods of transmission of motion by means of links, belts, gears, and cams. This work is related closely to the machine motions used in the steam engine and various shop machines. Two hours credit.

Course 30. ELEMENTARY SURVEYING. A brief course in the use of surveyors' instruments; laying out of walks, drives, ditches, and buildings; calculation of cuts and fills; elements of land surveying. Prerequisite, Plane Trigonometry. Three hours credit.

Course 51. MATHEMATICAL THEORY OF INVESTMENT. A course for the students of business and public affairs. Interest, annuities, amortization, sinking funds, and depreciation, building and loan, and life insurance. Two hours credit. Prerequisite, College Algebra or Advanced Algebra.

Course 52. DESCRIPTIVE ASTRONOMY. A general course in descriptive astronomy, dealing with the solar system and theories regarding its evolution; nebulæ, comets, meteors; measurements of the earth; determination of standard time. Two hours credit. Prerequisite, High-school Algebra, Geometry and Physics.

Course 54. ADVANCED CALCULUS. This course is intended for those who wish a better knowledege of calculus. It includes center of gravity; moments of inertia; center and radius of curvature; series; expansion of functions; successive and partial differentiation and integration; differential equations; hyperbolic functions; solution of higher equations; miscellaneous practical applications. Three hours credit. Prerequisite, course 7.

Course 55. THEORETICAL AND APPLIED MECHANICS. A study of the laws of statics and dynamics; action of forces upon bodies and the resultant motions; centers of gravity; moments of inertia; work and energy; impulse; momentum and impact; friction and lubrication; centrifugal force and the balancing of machines. Three hours credit. Prerequisite, course 7.

Course 56. FUNDAMENTAL CONCEPTS OF MATHEMATICS A study of definitions and properties of the different kinds of numbers; irrationals and limits; transcendental numbers; complex numbers; fundamental concepts of geometry with a brief discussion of non-euclidian geometries; logic of mathematics. Two hours credit. Prerequisite, twelve hours of College Mathematics.

Course 57. HISTORY OF MATHEMATICS. The growth and development of mathematics from the historical standpoint. The development of the applications of mathematics to practical affairs. This course also includes a study of the content of present courses in arithmetic, algebra, geometry, unified mathematics. Applied mathematics courses and their value in industrial education. Two hours credit. Prerequisite, fourteen hours of college mathematics.

Course 58. TEACHING OF SECONDARY MATHEMATICS. The essential features of course in mathematics designed for Junior and Senior High Schools. Methods of presenting the principles of these subjects. Prerequisite, fourteen hours of College Mathematics. Two hours credit.

HIGH-SCHOOL COURSES.

Course 1. ALGEBRA I. One-half unit credit.
Course 2. ALGEBRA II. One-half unit credit.
Course 3. GEOMETRY I. One-half unit credit.
Course 4. GEOMETRY II. One-half unit credit.
Course 5. ARITHMETIC. One-half unit credit.
Course 6. ALGEBRA III. One-half unit credit.
Course 7. SOLID GEOMETRY. One-half unit credit.

METHODOLOGY.

HATTIE MOORE-MITCHELL, Professor.
BERTHA E. DROWN, Assistant Professor.
OLIVE WOHLFORD, Student Assistant.
LORA WARD, Student Assistant.

Foreword. The day is past when the only requisite sought by a board of education is that the candidate has good grades in academic lines. Such a grade reveals the ability as a student but not necessarily as instructor. The aim of the Methodology department is to make clearer the teacher's privilege and the teacher's preparation from the standpoint of art in instruction. We hope to have the methods workroom open to those enrolled in the department four hours each day, enabling students to copy from models and inspect specimens of work contributed by others. Permission to visit the workroom will be granted (by card) to those not enrolled in methods work.

CHARTS, POSTERS AND WALL DECORATION. The gathering of suitable material for charts when away from home is a task which does not bring proportional returns. The virtue of such work often lies in the correlation with other studies and the coöperation of home and school in securing material. On account of these two facts the number of charts required from each student is reduced to the minimum, and suggestive types are considered by use of blue-print copies of charts and posters which have been used in the schoolroom under normal conditions throughout the year. Each student compiles a portfolio of these blue prints for future suggestiveness. Bibliography or references available to students taking work in methods.

PRIMARY TRAINING LEAGUE. This organization is instrumental in holding the fellowship among the primary teachers after they leave S. M. T. N. The membership roll constitutes a mailing list and directory which enable us to keep in touch with every primary teacher who has once been a member of the primary methods class.

CLASS SCHEDULES. During earlier parts of the session each student is provided with an individual schedule showing what is included in the work upon which his grade will be made. By this plan several hours' continuous effort can be given to one line of work during Saturday or a holiday, which work otherwise would need be completed by piecemeal.

SPECIAL LECTURES. Each schedule provides for notes from a definite number of special lectures. These lectures are given by various members of the Faculty, experienced teachers, and out-of-city instructors.

Often one specially trained and equipped is able, in one address, to accomplish more than is achieved through several routine recitations.

EDUCATIONAL JOURNALS. The department carries several subscriptions for each of the different current educational publications, and articles relevant to the regular work or season are reviewed by class. A "speaking acquaintance" with these various journals is cultivated throughout the year. One quiz in each course is concerned entirely with reference to work from these journals.

ENTRANCE EXAMINATIONS. Teachers holding first-grade certificates and having had five years' successful experience may make application for entrance examination. (Two hours credit in grade methods.) All such applications must be made within the first ten days from opening of session. This test, being based on experience, rather than formal text, is not identical with the regular class work, and a teacher being granted this entrance credit by examination may, with profit, enroll in regular class work for remaining two hours' credit offered in the grade teachers' course or primary training course.

NOTEBOOKS. Notebooks are indexed and catalogued in such a way that additional material may be subsequently incorporated. Mimeographed copies of poems, drills, board designs, programs and bibliography are filed in an indexed clipping book which permits future contributions after the course is completed.

SUBSTITUTE RECITATION. Students in general methods and normal-training methods have privilege of attending, during the semester, three recitations in other classes giving professional credit. A written report of such visit is made by student in lieu of note from methods recitation from which he is excused. This excuse is granted before each absence, and no substitute recitation credit granted without such excuse.

With the prospect of more convenient quarters and more complete equipment by opening of Carney Hall, we are happy in the prospect that the summer will find us ready to answer the "Calls to the Highlands" of the profession in consistent, sane, practical preparation for a fuller measure of service in the schoolroom of to-morrow for the men and women of to-morrow's to-morrow.

Course 2. GRADE METHODS. Arranged in three units—fall, winter, spring. Each unit provides for general exercises, outlines for one biography suitable to season. Problems concerning teaching of certain phases of textbook work are opened for discussion by means of a question box to be opened each Monday. Class meets four days in the week. Two hours credit.

Course 3. GRADE METHODS. Open to students who already have two hours credit in grade methods either in Summer School work or regular semester. Work is outlined by subjects—each subject being presented by means of outlines calling for library reading, personal experience and individual preparation. State texts will be reviewed and teachers will be enabled to compile a valuable manual for supplementary work correlated with content of state text. At close of fifth week (July 9) each member of the class presents written discussion (500 words). Subjects chosen from following list (two hours credit):

Suggestions for ten minutes a week for ten weeks in general exercise.
Outline for sixty-minute program on Lincoln's birthday.
Opportunity for (outside school hours) acquaintance with grade pupils.
Usefulness and uselessness of class criticism.
Five handwork projects (description, cost, time consumed and correlations with text-book work).

Ten stories every grade teacher should know well enough to relate (bibliography given).
Devices in connection with music work.
The teacher's play-hour duty.
Essentials in playing a game.
The psychology of an invitation.
"I'll not teach it that way again."
Four seasonable biographies for the grades.
Schoolroom conveniences (at least five).

Course 4. PRIMARY METHODS. This course is materially the same as offered last Summer Session. The work is planned by months, each month being a unit including special-day program incidental to the month; drills and recreations in connection with month's work are suggested. A list of supplementary books is compiled for first three grades. Class meets four days in the week. Two hours credit.

COURSE 5. PRIMARY METHODS. This course is provided for those who already have two hours credit in Primary Methods. The work is outlined by subjects, treating each by means of demonstrations, lectures, library readings, charts and discussions. At close of third week (June 25) each member of the class presents 500 words discussion of some phase of primary work. These papers become property of the department and may be read before class. In order that students may form some estimate as to range of subjects chosen, the following suggestive list is cited:

Through the gates of storyland.
Christmas in foreign lands.
What I wish the teacher before me had done.
Glimpses into other teachers' schools.
Language in the third grade.
What to do the first day.
The primary teacher's trunk.
Difficulties in teaching spelling.
The primary teacher's notebook.
What a primary teacher ought not to see.
Why school children are so parrot-like.
Lest we forget we once were primary people.
Picture study: its use and abuse.
Elimination of waste in busy work.
Value of construction work.
Mothers' meeting with the primary teacher before school opens.
The primary teacher I remember best.

Class meets four days in the week. Two hours credit.

Course 51. GENERAL METHODS. Text: Thorndike's Principles of Teaching. One year's work in Psychology is recommended as prerequisite, although mature students with experience in teaching or high-school graduates from normal-training course may carry the work. This course presents teaching as a scientific profession as well as a practical service in imparting information. The application of principles to the current educational problems is a dominant feature of the course. Reviews in typewritten form enable the student in his study of the text in noting points needing library reference or report from personal observation. Course is offered each semester. Students in this course are allowed three "substitute recitations." (See "Foreword" and "Substitute Recitation.") Class meets four days a week. Two hours credit.

Course 52. NORMAL-TRAINING METHODS. Open to students having at least junior standing. The introduction of normal-training courses into 350 of the accredited high schools of Kansas brings with it a demand for teachers who can take charge of the normal-training courses. Few schools have an enrollment warranting the services of a special normal-training teacher. As a result, the work must be given by one whose special preparation has been in other lines. The demand for this preparation is met in this course for normal-training teachers. The bibliography includes the normal-training course texts which are used in the various high schools of the state, together with outlines of work; also reviews covering normal-training literature edited by the state department. A series of lectures giving definite suggestions as to plans and policy in meeting the state course of study and examination tests for the candidate for normal-training certificate is a valuable feature of this course. Students taking this course will find any standard work on teaching a desirable reference text. Three substitute recitations are allowed during semester. (See "Foreword," "Substitute Recitation," and "Equipment.") Class meets four days a week. Two hours credit.

DEPARTMENT OF MUSIC.

WALTER McCRAY, Director.
ANTHONY STANKOWITCH, Pianist.
NORA NEIL, Pianist.
ELIZABETH GILBERT, Voice.
HELEN GIBSON, Pianist.
RHETTA HESSELBERG, Violin.
————, Pipe Organ, Wood Wind Instruments.
WINONA McCLATCHEY, Public-school Music.

This department offers courses as complete as any of the leading conservatories of music. Every teacher in this department is an artist in his special line, which gives pupils advantages they seldom get outside the large cities.

PUBLIC-SCHOOL MUSIC.

Teachers are not only given the training needed for the work of the schools, but may take complete courses for supervisors of school music. Our course not only requires a good knowledge of piano, voice, harmony, counterpoint and sight singing, but each pupil must do practice teaching in the Model School, and directing of school chorus, composed of pupils from the eighth grade of the Model School.

BRASS AND WOOD WIND INSTRUMENTS.

Students desiring to study cornet, clarinet, oboe, etc., have exceptional advantages here, as the teacher of these instruments is a band conductor and trumpet soloist of years of experience. Students must furnish their own instruments, and those more advanced are given ensemble work in the school band and orchestra.

Students will be admitted to the Department of Music at any time during the year, but advantages are generally better if the entrance is made in September, or at the beginning of the new term, since many of the classes are only organized at the beginning of the semester.

PHYSICAL EDUCATION.

G. W. WEEDE, Director for Men.
MAY G. LONG, Director for Women.
PAUL J. ALYEA, Student Assistant Director for Men.
REGINA FRANK, Assistant Director for Women.

RECREATION. Several lines of recreation are being planned for the summer students. A baseball league will be formed and a schedule of twilight games played if the summer students desire. Tennis and volley ball tournaments and a track meet will be held, to which all students are eligible. The recreative and social side of these games will be emphasized.

MEN.

Course 4. PLAY AND PLAYGROUND METHODS. A course for teachers who supervise the school playground. Games, both light and strenuous, will be taught. One hour credit. Two hours credit given to those who take this course and participate in the twilight league, also.

Course 7. HIGH-SCHOOL COACHING METHODS. For men who direct and coach athletics in high schools.

(*a*) *Football:* Fundamentals and systems of play. Lectures and demonstrations. One hour credit. Two hours weekly.

(*b*) *Basket-ball:* Fundamentals and systems of play. Lectures and participation. One hour credit. Two hours weekly.

(*c*) *Track:* Methods of training men for each event. Diet in training and amount of work. Lectures and demonstrations. One-half hour credit. One hour weekly.

(*d*) Classes will be organized in baseball, tennis and other allied sports, should a demand be felt.

WOMEN.

Course VI. SCHOOL-ROOM GYMNASTICS. This course is designed for the primary, intermediate and rural teachers and aims to fit her to carry on the work in her own school room. It includes outlines for general exercises in all grades, lesson plans for each grade by months. Drill in giving commands, special posture drill, school-room marching, fancy steps, folk dances suitable for school-room use. Prerequisite, courses I or II. One-half hour credit. Three hours a week.

Course 51. MARCH TACTICS. Elective. Includes figure marching, fancy drills and a simplified form of military drill. The course aims to qualify one to arrange drills suitable for any occasion. Three hours weekly. One-half hour credit.

Course IV. PLAYS AND GAMES. Elective. Graded material for elementary schools and playground, including organized games, singing games and folk dances. Five hours weekly. One hour credit. During the Summer Session a two-hour credit is given to those who take this course and participate in the twilight league and playground work.

RURAL EDUCATION.

EDGAR MENDENHALL, Professor of Rural Education.
————, Rural Critic Teacher.

Course 3. RURAL SCHOOL MANAGEMENT. This course is primarily for beginning teachers and teachers of limited experience and training. The organization of the rural school; the making of the program; problems of school discipline; school-room decoration; equipment and teaching problems of the rural school will receive attention. Three hours credit.

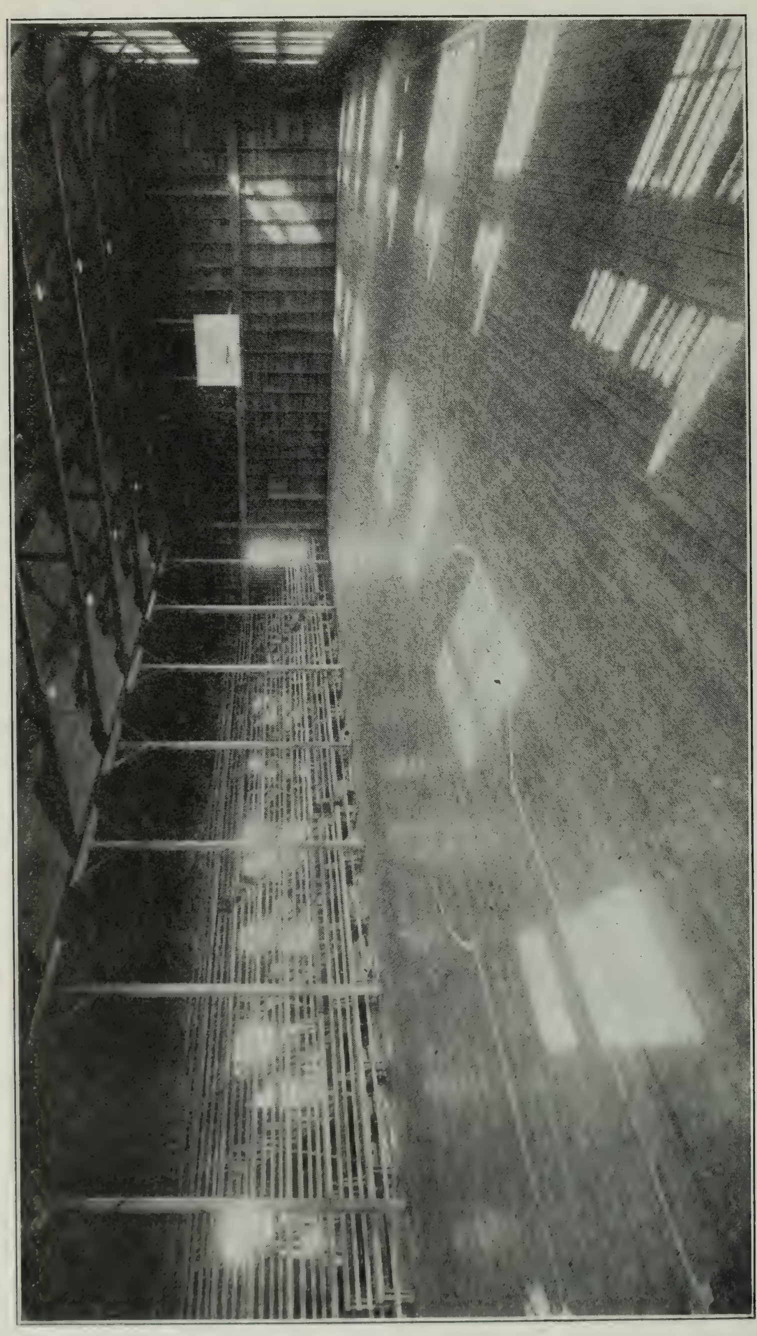
Course 15. THE SCHOOL AND THE COMMUNITY. Methods and plans for making community surveys; the school as a social and recreational center; parent-teachers organizations; boys' and girls' clubs; entertainment programs for community meetings; community resources in teaching the fundamental subjects. Two hours credit.

Course 16. STANDARD TESTS AND MEASUREMENTS IN IMPROVING INSTRUCTION IN RURAL SCHOOLS. Practical training in the use of the standard reading, writing, arithmetic, spelling, and history tests and scales in order that rural-school teachers may compare the work of rural pupils with each other and with the attainment of pupils of cities. Two hours credit.

Course 18. SHORT COURSE FOR COUNTY SUPERINTENDENTS. Offered July 19-23. See Summer Bulletin. Rural-school supervision; records and reports of county superintendents; school-board meetings; principles of school consolidation; rating the efficiency of teachers; the training of teachers in service; standard tests and measurements in the rural schools; school laws; boys' and girls' club work; teachers' records and reports; school exhibits; county field meets. This course will be given by specialists in the particular lines indicated. Non-credit course.

Course 53. RURAL EDUCATION. This course will be organized for teachers of experience, principals of village and rural high schools, and supervisors of rural schools. The larger problems of rural education: (1) School and community; (2) hygiene and rural community sanitation; (3) community recreation; (4) the rural church; (5) the rural home; (6) model curricula for rural common schools and rural high schools; (7) school consolidation; (8) the district and county plan of school organization. A basic text will be used, supplemented by reading the reports of state superintendents, school surveys and other appropriate material. Three hours credit.

Course 62. THE ADMINISTRATION OF VILLAGE AND CONSOLIDATED SCHOOLS. The state's relation to education; types of state educational organization; county and district organization; the school board; the principal and his teachers; pupils, parents and the public; grading systems; introducing standard tests; attendance, curriculum and organization; the health of the school child; play and physical activities; school equipment; records accounts, and reports; problems of the consolidated school. Three hours credit.



A Corner in the Temporary Gymnasium.

SECTION VIII.

Extension Division.

L. A. GUTHRIDGE, *Director.*

GENERAL INFORMATION.

The State Manual Training Normal School has a well-developed and well-organized extension department, with a director in charge whose entire time is devoted to its further development and usefulness.

The work of this department is proving of great value to teachers in the service and to others contemplating entering the profession. While hundreds of teachers have availed themselves of the opportunity to begin a college course or continue one to completion after it has been once begun, still there are many persons in and out of the profession who are unaware that by carrying some form of our extension work throughout the winter months and supplementing it with work in residence here at the Normal during the summer term, in a very short time they can be well along toward a life certificate or even a degree.

It is the desire of this institution to extend its services to the greatest number possible. This is a state school—your school. If circumstances prevent you from pushing the gates of the campus inward so that you may enter and enjoy the benefits and privileges afforded resident students, all you need do is to send forth a call and the gates will swing wide open to allow the Normal to come to you. Its location in the center of a network of interurbans and steam railways, furnishing easy and rapid transportation for students and Faculty, together with the rural free delivery of mail, makes it possible for us to reach a larger number. In fact, your Normal is as near you as your mail box.

The members of the regular Faculty, including the heads of departments, constitute the extension faculty, so you are assured the same high grade of instruction you would receive if the work were done in residence. Students doing work through this department are expected to meet the same standards and degree of efficiency as students enrolled in the Normal, and as the courses are identical, they receive the same credit for completed work.

CORRESPONDENCE COURSES.

We are unable to offer as many courses by correspondence as are offered students in residence, because the very nature of some of the courses excludes them from this method of study and instruction, and because of the large amount of class-extension work being done by the department.

CLASS EXTENSION.

Class extension is really correspondence work plus the personal touch of the instructor who meets the class regularly every week or every two weeks, at the place in which the class is organized. This method is followed where a sufficient number desiring the same work, organize and ask for an instructor. This is proving not only a very effective method but is becoming so attractive the Normal is being forced to increase its Faculty to meet the demand for this kind of service.

The minimum number required for an extension class varies with the distance from the Normal and the ease of access. The number required for any particular place will be stated when requested.

Application for an extension class should be made early as it is important that these classes should begin on a regular date as well as the work at the Normal. Owing to the increased demand, classes whose enrollment cards and fees are first to reach the department will receive first consideration.

HOW TO ORGANIZE AN EXTENSION CLASS.

A group of teachers desiring an extension class should get in touch with the director of extension either personally or by correspondence, and if they have decided upon the course an instructor will be sent to perfect the organization and make proper assignments. If the course has not been determined upon we will be glad to send an instructor to assist in reaching conclusions.

SATURDAY WORK.

Courses in which laboratory work is required are offered to such students as find it possible to reach the institution on Saturday and spend the day in the laboratories. The laboratories are open and competent instructors are provided for this work.

OPPORTUNITY CLASSES.

The evening vocational school or night school, as it is usually called, is maintained for the benefit of those who have to work for a living during the day. The work is directed and taught by the regular members of the Faculty assisted by practical men from the industries. We now have classes organized in electrical work such as electrical machinery, automobile electricity, armature winding, and radio work; steam engineering, mining, drafting, machine-shop practice, automobile mechanics, shop mathematics, commerce, dressmaking, millinery, cooking, meal serving, home management, home nursing, and household budget making.

Our extensive and splendidly equipped shops and laboratories offord the best of opportunities for busy people to become more efficient.

The enrollment increases from term to term and new subjects are offered whenever there is a sufficient demand.

INFORMATION BUREAU.

A general information bureau is maintained for the benefit of people in every walk of life who may have interesting and important questions arising. Feel free to write us for all kinds of information.

LIBRARY ASSISTANCE.

Materials on educational topics may be secured, suitable for commencement addresses, teachers' meetings, parent-teachers' associations, women's clubs.

Books, pamphlets and clippings will be supplied for debates, orations, essays, readings and school entertainments.

Pictures are loaned for special occasions.

Assistance will be given rural, grade and high schools in selecting and ordering books for libraries.

AMOUNT OF WORK.

The maximum amount of work for the year will be ten hours, all of which may be taken by correspondence; all by extension or part by correspondence and part by extension. The student may enroll for the maximum amount of work at one time or he may enroll for part of it and later enroll for more, being governed by the following:

1. In order to get the maximum amount of work for the school year (September 15 to May 15) the student must enroll for at least part of it by October 15.
2. No enrollment will be accepted after March 15 till the next September.
3. Work must be completed and reach the extension department by May 15, unless time is extended on account of sickness.
4. Not more than two courses may be carried at one time.
5. No correspondence or class-extension work will be offered during the summer.

FEES.

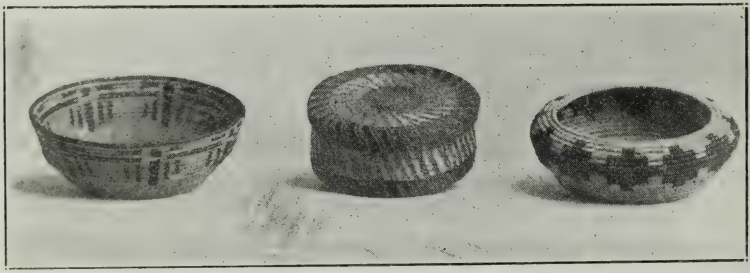
(See Extension Bulletin.)

ARTS AND CRAFTS.

BERTHA SPENCER, Associate Professor of Applied Arts.

BY EXTENSION.

Course 1. ART LEATHER. This craft presents unlimited possibilities and the work possesses the charm of variety that is given to original design. The processes of tooling, modeling and coloring will be taught in executing designs on useful articles. Two or four hours credit.



SEWED BASKETRY.

Course 4. ELEMENTARY BASKETRY. Making of simple pieces in reed and raffia, in which design is an important feature. Two hours credit.

Course 5. ADVANCED BASKETRY. Advanced problems in reed and raffia, and pine needle and Japanese matting baskets. Prerequisite, course 3. Two hours credit.

Course 6. BOOKBINDING. Includes simple problems in portfolio, notebooks, blank books, the binding of magazines and the mending and rebinding of books. Two or four hours credit.

BIOLOGY.

O. P. DELLINGER, Professor.
W. E. RINGLE, Associate Professor.
H. H. HALL, Associate Professor.
ELIZABETH FLEESON, Assistant Professor.

BY EXTENSION.

Course 1. GENERAL BIOLOGY. This course is an introduction to the other biological sciences, and aims to acquaint the student with the elementary forms and forces of living nature. Here the student gets his first glimpses of the laws of evolution and heredity as they apply to human progress. Much attention is paid to the evolution of conduct of life. Types for study are selected as far as possible from the common animals. Three hours credit.

Course 14. NATURE STUDY. This course is designed especially for primary and grade teachers. It attempts to answer the question, What knowledge of living form is adapted to children between the ages of six and fifteen? A review of the literature in this field is also given. Two or four hours credit.

Course 17. HYGIENE AND PUBLIC HEALTH. A course in elementary bacteriology designed especially for grade and rural teachers. The course is a general survey of the field of bacteriology as it relates to civic and school sanitation, agriculture and the preservation of foods. The student becomes familiar with immunology and the physiological factors involved in the natural resistance to disease. Three hours credit.

Course 18. VOCATIONAL HYGIENE AND SANITATION. A course designed especially for students in industrial arts. The principles of hygiene and sanitation as related to the industries and the men in industrial work form the basis of this course. One hour credit.

Course 65. SOCIAL BIOLOGY. In this course the part biology has played in the development of the race is studied, especially the relation of biology to medicine, agriculture and education is emphasized. There are five books to be read and reviewed. Four hours credit.

BY CORRESPONDENCE.

Course 17. HYGIENE AND PUBLIC HEALTH. A course in elementary bacteriology designed especially for grade and rural teachers. The course is a general survey of the field of bacteriology as it relates to civic and school sanitation, agriculture and the preservation of foods. The student becomes familiar with immunology and the physiological factors involved in the natural resistance to disease. Three hours credit.

Course 53. EUGENICS. The course is especially designed for domestic-science students, but is open to all students of college grade. A careful review of the literature on heredity and eugenics is given, together with a study of the law of reproduction. Two or four hours credit.

Course 65. SOCIAL BIOLOGY. From the outline you will notice there are eleven different topics coming from a wide range of books. The student will be expected to buy one of these books, the remainder will be loaned from the library. Each assignment is to be read and a review made of that reading. Four hours credit.

SATURDAY WORK.

Course 1. GENERAL BIOLOGY. This course is an introduction to the other biological sciences, and aims to acquaint the student with the elementary forms and forces of living nature. Here the student gets his first glimpses of the laws of evolution and heredity as they apply to human progress. Much attention is paid to the evolution of conduct of life. Types for study are selected as far as possible from the common animals. Three hours credit. Laboratory fee for material used.

Course 2. GENERAL BIOLOGY (continued). In this course the student studies the laws of growth and reproduction of living organisms as they are illustrated in plants. Here emphasis is given to the economic phases of botany. Plants are studied in their relation to medicine, textiles, lumber, ornamentation and food production. Attention is given to propagation and distribution. Three hours credit. Laboratory fee for material used.

Course 16. General Bacteriology. This course is required of all students who major in domestic science or agriculture, and is open to any student in the college course. It is a general introductory course consisting of lectures and laboratory work, in which the student becomes acquainted with cultural methods, staining values and other fundamentals of bacteriology. Four hours credit. Laboratory fee for material used.

AGRICULTURE.

BY CORRESPONDENCE OR EXTENSION.

Course 4*a*. Grains.—Wheat, Oats, Rye and Barley. The most of the book and reference work is offered with one and one-half hours credit. The student may take laboratory work in residence and complete the course in grains for two and one-half hours credit. Texts—"The Small Grains," by Carleton, published by Macmillan Company, Chicago, Ill.; "Corn," by Bowman and Crossely, published by Bowman and Crossely Publishing Company, Ames, Iowa.

Course 4*b*. Forage Crops. A study of the principal meadow and pasture grasses and the legumes grown in this part of the state. This course is offered under the same conditions and with the same credits as the Grains course. One and one-half or two and one-half hours credit. Text: "Forage Plants and Their Culture," by Piper, published by Macmillan Company, Chicago, Ill.

Course 6*a*. Breeds of Live Stock. This course makes a study of the history, development and characteristics of the leading breeds of live stock, pedigrees and performances of superior individuals among horses, cattle, sheep and swine. Text: "Types and Breeds of Farm Animals," by Plumb, published by Ginn & Company, Chicago, Ill.

Course 6*b*. Feeds and Feeding of Farm Animals. One hour credit. Text: "Feeds and Feeding," by Henry and Morrison, published by Henry & Morrison Publishing Company, Madison, Wis.

Course 6*c*. Diseases of Animals. One hour credit. Text: "Diseases of Animals," by Mayo.

Course 3. Vegetable Gardening. The book work is offered with a credit of one hour. Where suitable provisions can be made for laboratory work (subject to the approval of the instructor), this course may be given with a credit of two hours. Text: "Productive Vegetable Growing," by Lloyd, Lippincott Company, Philadelphia, Pa.

Course 7. Farm Management. This course may be taken with a credit of two and one-half hours after the student has had seven and one-half hours of other College Agriculture. Texts: "Farm Management," by Warren; "Laboratory Exercises in Farm Management," by Warren and Livermore. Both texts may be secured from the McClurg Company, Chicago, Ill.

Course 55. Teaching Agriculture in the High School. This course is given with a credit of two and one-half hours if the student is teaching Agriculture in a high school at the time the course is taken. Texts: "Materials and Methods in High School Agriculture," by Hummel, published by Macmillan Company, Chicago, Ill. "Teaching of Agriculture," by Nolan, published by Houghton, Mifflin Company, Chicago, Ill. The student must also have access to two or three good high-school texts.

Course 52*a*. Farm Poultry Management. One hour credit. Text: "Productive Poultry Husbandry," by Lewis, published by J. B. Lippincott Company, Philadelphia, Pa.

Course 1. RURAL AGRICULTURE. This course is designed to meet the needs of those who are preparing to teach in the grades and rural schools. Two or four hours credit. Text: "Productive Agriculture," by Gehrs, published by Macmillan Company, Chicago, Ill.

BY EXTENSION.

Course 2. GENERAL AGRICULTURE. A course in which a general survey of the whole field of agriculture is taken. This course is planned especially for students who wish a general introduction to this great industry. Three hours credit.

Course 4. AGRONOMY. Lectures and recitations on the history, production, cultivation, harvesting and marketing of farm crops. The laboratory and field work will consist of a study of all crops adapted to this region and judging of different cereals. Four hours credit.

Course 11. BOYS' AND GIRLS' CLUB WORK. This course deals with the origin and develoment of club work. Designed especially for teachers preparing to teach in rural and city schools, teachers of agriculture, principals and superintendents. In this course the best methods, plans and outlines for interesting boys and girls in some phase of club work will receive careful attention. A thousand boys and girls of the Pittsburg city schools are enrolled in Poultry, Sewing, Baking and Garden Clubs. Work with these clubs forms part of the course. Two hours credit.

Course 54. AGRICULTURAL BACTERIOLOGY. Two hours credit.

CHEMICAL AND PHYSICAL SCIENCES.

J. A. YATES, Professor.
GEORGE EMERY, Associate Professor.
MARGARET COVENTRY, Assistant Professor.
WILLIAM MATHEWS, Assistant Professor.
FRANK J. DOBROVOLNY. Assistant Professor.

BY EXTENSION.

Course 1. CHEMISTRY. In this course the student becomes acquainted with the different materials and elements that are used in every industry. He studies the principles involved in the transformation of the different substances with which he works. Applications of the principles of this fundamental science in all phases of work are stressed. Due emphasis is placed upon the applications of these principles to the different lines of trade or profession in which the student is engaged. Subjects included in this course are the gases, as oxygen, nitrogen, carbon dioxide, together with a description of the common metals, how they rust, protection of same; in a word, the chemical processes involved in converting raw material into finished products. Other subjects, as the study of acids, oils, paints, salts, etc., will be considered in a practical way in this course. Laboratory fee for material used.

This course may be taken where the student has access to a high-school or other chemical laboratory. Five hours credit.

Course 15. GENERAL SCIENCE. This course is planned for grade teachers, and consists of easy demonstrations, which may be performed by the teacher to illustrate some of the scientific principles involved in the study of such subjects as air, water, fire, food, clothing, etc. Two hours credit.

Course 64. HISTORY AND METHODS IN PHYSICAL SCIENCES. This is a course of lectures given by the different teachers in the department. These lectures consist of a nontechnical discussion of the most important discoveries in the physical sciences. The applications of these principles for efficiency is emphasized. Three hours credit.

Course 22. HEATING AND VENTILATION. The principles of operation underlying the various modern systems of heating and ventilation installed in homes and school buildings form the basis of this course. It includes practical problems in the designing of heating and ventilating systems for buildings. Two hours credit.

Course 81. GEOLOGY. This course is planned to acquaint the student with the work of the geologist and to enable him to appreciate the relations of this subject to our industrial life. Emphasis is placed upon the industrial and economic side of geology. Among the subjects considered may be mentioned the distribution and supply of fuels; the geologic processes in soil building; the raw material of many of our manufacturing industries; road building; and the making and reading of geologic maps, together with their economic value. Three hours credit.

Course 82. GEOLOGY 2. This course begins with historical geology, and considers the lessons of history to be read in the different layers of rocks. Two hours credit.

Course 83. ECONOMIC GEOLOGY. As the name implies, this course deals with the economic resources of the United States from the viewpoint of geology. The mineral products, as iron and the other common metals, clays, coal, oil and gas, building stones, cement, materials, gypsum, fertilizers, water, and other products, are studied. The distribution of these resources, mode of occurrence, origin, uses, production and conservation are considered in this course. Two or four hours credit.

Course 71. HOUSEHOLD PHYSICS. A course for girls interested in home economics. It includes an inquiry into physics as applied to the problems of sewage disposal, lighting, heating, ventilating, cooking, house cleaning, laundering, etc. A careful study is made of modern labor-saving, sanitary and economical appliances for the home. Prerequisite, High-school Physics or course 30. Three hours credit.

BY CORRESPONDENCE.

Correspondence work will be offered in the following courses, but no credits will be given for the correspondence work alone. The laboratory work of the course will need to be done in residence at some future date. Upon completion of both the laboratory work and correspondence work the student will be a candidate for the hours credit listed after the subject.

Course 1. CHEMISTRY. In this course the student becomes acquainted with the different materials and elements that are used in every industry. He studies the principles involved in the transportation of the different substances with which he works. Applications of the principles of this fundamental science in all phases of work are stressed. Due emphasis is placed upon the applications of these principles to the different lines of trade or profession in which the student is engaged. Subjects included in this course are the gases, as oxygen, nitrogen, carbon dioxide, together with a description of the common metals, how they rust, protection of same; in a word, the chemical processes involved in converting raw material into finished products. Other subjects, as the study of acids, oils, paints, salts, etc., will be considered in a practical way in this course. Laboratory fee for material used. Five hours credit.

Course 26. GAS ENGINE ELECTRICTY. A companion course to course 25. Electrical circuits to the modern gasoline automobile. Devoted chiefly to the study of the storage battery, the starting motor, the generator, lighting and ignition circuits, and to trouble-hunting in these parts. Prerequisite, High-school Physics. Two hours credit.

Course 31. Mechanics and Heat. This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in building, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, High-school Physics. Four hours credit.

Course 33. Electrical Machinery. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, High-school Physics. Four hours credit.

SATURDAY WORK.

Course 1. General Chemistry. This course consists of lectures, recitations and laboratory work upon the fundamental principles of this science, together with the application of chemistry to the various arts and industries. Among the practical subjects considered are chemical problems in soil building, plant and animal foods, poisons for farm and orchard pests, paints, oils and varnishes, water, air, fuels, and the elementary principles of chemistry in food preparation and other operations in the home. Separate sections will be organized for men and women that emphasis may be placed upon their respective work. This course is not open to students offering elementary chemistry for admission. Laboratory fee for material used. Five hours credit.

Course 2. Inorganic Chemistry. This course is built upon a course in elementary chemistry, and consists of lectures and recitations upon the more difficult principles involved in general chemistry, including such subjects as gas laws, the solution of chemical examples, nomenclature, principles of solution, etc. The application of chemistry to the varied needs of man is emphasized. Laboratory fee for material used. Four or five hours credit.

Course 3. Qualitative Analysis. This course consists largely of laboratory work. Emphasis is placed upon the analysis and properties of those substances that are used in the industrial arts, as oils, pigments, paints, varnishes, fuels, and alloys. Lectures and recitations upon the principles involved in chemical analysis are given. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

Course 10. Food Chemistry. A special course for domestic science students. This course consists in the identification of food adulterants and preservatives, the effect of these upon the body, the analysis and relation of the different classes of foods, and includes a study of organic chemistry related to food. Prerequisite, Chemistry 1. Three hours credit.

Course 23. Electric Wiring. A practical course in the wiring of electric appliances and motors. It includes the study of the "code," the planning of jobs and making cost estimates on them, as well as the actual installing of "approved" circuits. Two or four hours credit.

Course 31. Mechanics and Heat. This is a laboratory and lecture course covering the theory and practical applications of the principles of mechanics, both static and dynamic, and of heat. It includes in it the study of stresses in building, bridges and derricks, efficiency of machines, train-schedule calculations, strength of materials, liquid pressure, expansion of gases, liquids and solids, steam and gas engine efficiencies, refrigeration, etc. Prerequisite, High-school Physics. Four hours credit.

Course 33. Electrical Machinery. The theory of direct- and alternating-current machinery and its applications as found in the industrial world. It includes a study in the lecture room and laboratory of dynamos, motors, starting equipment, rectifiers, transformers, transmission lines, regulating devices, etc. Prerequisite, High-school Physics. Four hours credit.

Course 51. Organic Chemistry. A general course in organic chemistry, including lectures, recitations and laboratory work. This course emphasizes the properties and uses of the organic compounds found in our industrial activities, together with the underlying chemical principles involved. Prerequisite, Chemistry 1. Laboratory fee for material used. Five hours credit.

COMMERCE.

E. F. Sholtz, Director.

BY CORRESPONDENCE.

Course 4. Business Law. Utility of the subject. Sources and authority of our laws. Contracts, bailments, sales, negotiable instruments, credits and loans, guaranty and surety, agency, partnership, insurance and corporations. Two hours credit.

Course 8. Commercial Geography. See Geography.

Course 10. Methods. This course deals with the pedagogical and professional phase of commercial work. The fundamental theory underlying the subjects of the curriculum is emphasized and shown by concrete illustrations. Special methods of instruction, problems and difficulties peculiar to the teaching of each subject, presentation of subject matter, content and arrangement of material, organization and administration, are carefully discussed. One hour credit.

Course 11. Salesmanship. Applied psychology in the art of selling. Viewpoint of salesman and purchaser is studied. Study of characteristics that make a good salesman. Two hours credit.

DRAWING AND DESIGN.

Elsie Bowman, Associate Professor of Applied Arts.

BY CORRESPONDENCE

Course 1. Free-hand Drawing. Instruction is given in the principles of perspective and of light and shade. The students sketch objects, interiors, exteriors and street scenes. A study of pencil sketching is made both in outline and in tone. One hour credit.

Course 2. History of Art. An appreciative study of painting sculpture and architecture in historical development. One hour credit.

Course 10. Design. A study of the fundamental principles of design in line, mass and color. One hour credit.

BY EXTENSION.

Course 3. Primary Drawing and Handwork. A short course of problems in drawing, painting and construction suitable for children in the primary grades with methods and a course of study. Some picture study may also be given. Two hours credit.

Course 8. Intermediate Drawing. A short course of problems suitable for upper grade pupils in drawing and non-equipment construction. Two hours credit.

EDUCATION.

D. M. Bowen, Professor.
Frank Deerwester, Associate Professor.

BY EXTENSION.

Course 2. Modern Education. A course that traces the movements and influences that have brought about the present ideals and practices in education, with emphasis on current educational problems. Three hours credit.

Course 3. Rural Education. This course is primarily for beginning teachers, and teachers of limited experience and training. The organization of the rural school, the making of the program, problems of school discipline, school-room decoration and equipment. The rural-school playground will receive due consideration. Three hours credit.

Course 5. Social Principles in Education. A course in educational sociology, dealing with the social laws and principles governing education. A socialization of the school, its administration, course of study, methods, and discipline. A discussion of the school as an instrument for social efficiency. Open to sophomores. Two hours credit.

Course 8. Child Psychology. The aim of the course is to acquaint students with the most important established facts and principles of mental and physical growth of the child; to enable students to recognize types and individual differences among children; to notice, interpret and deal properly with certain defects; to cultivate an intelligent sympathy with children. Two hours credit.

Course 52. Educational Measurements. An application of the principles of scientific management to the problems of the school; measuring the child, his physical and mental efficiency; the latest scientific tests for measuring the product of teaching arithmetic, English composition, handwriting, drawing and other school studies. Prerequisite, four hours Psychology. Three hours credit.

Course 57. Educational Psychology. This course deals with the application of psychological principles to education. The laws of learning; the amount, rate and limit of improvement; the factors and conditions of improvement; mental discipline; mental fatigue; individual differences and their causes; and original tendencies of man. Discussions, outlines, readings and reports. Course in General Psychology prerequisite. Three hours credit.

BY CORRESPONDENCE.

Course 2. Modern Education. The purpose of this course is to introduce the student to the best in modern educational ideas and educational practice. As a basis for this course the essential facts of modern educational development will be reviewed. Three hours credit.

Course 51. School Administration. A study of the larger problems of administration; the relation of the state to education; the various units of school organization—district, township, county, state and nation; the various administrative officers, their powers and duties; the teaching, staff and present tendencies of education administration in America. Offered spring semester. Three hours credit.

Course 54. Administration of Secondary Education. The purpose of this course is to introduce the student to the vital problems of secondary education; the administration of secondary schools, courses of study, organization and management, social factors, school government and material equipment. Two hours credit.

ENGLISH.

Ermine Owen, Professor.

BY CORRESPONDENCE.

Course 5. An intensive study of the principles of structure of the short story as to plot, characterization, visualization. A study of Albright's text, "The Short Story," published by the Macmillan Company, Chicago, Ill. The student will outline each chapter of the Albright text and then outline a number of short stories, assigned by the instructor, according to the plans and principles presented in the text. Two hours credit.

FOREIGN LANGUAGES.

Samuel J. Pease, Professor.
Ernest Bennett, Associate Professor.

BY EXTENSION.

French 1 (*a*) Fraser and Squair: French Grammar, lessons 1 to 30. About fifty pages of easy reading. Three hours credit.

French 1 (*b*) Fraser and Squair: Part I, completed, with the commoner irregular verbs. About 100 pages of easy reading. Three hours credit.

Latin 11. Latin in English. An introductory study, from the historical standpoint, of the universality of the influence of Latin on modern thought and language, especially on English vocabulary, orthography, grammar, rhetoric, literature, science, law and government, art. Lectures, exercises, assigned readings. Two hours credit.

Spanish 1 (*a*) Hills and Ford: First Spanish Course, lessons I to XXX. Pittaro's Reader, about 100 pages. Three hours credit.

Spanish 1 (*b*) Hills and Ford and Pittaro completed. Additional reading. Three hours credit.

Course 7. OUTLINE OF SPANISH LITERATURE. Text: Fitzmaurice-Kelly's Spanish Literature. Lectures alone, open to all, one hour credit; with readings in English or Spanish, three hours credit.

Course 8. OUTLINE OF LATIN-AMERICAN LITERATURE. Text: Coester's Literary History of Spanish America. Lectures alone, open to all, one hour credit; with readings in English or Spanish, three hours credit.

Any other course in the department will be given on sufficient demand.

Not more than three hours credit may be given for any one course by extension.

BY CORRESPONDENCE.

French 1. ELEMENTARY. Five hours credit. Open only to those who have a speaking knowledge of the language.

French 2. INTERMEDIATE. Five hours credit. May be divided: three hours grammar and composition, two hours reading and exercises.

French 3. MODERN WRITERS. Three hours credit.

French 5. MODERN THEATER. Three hours credit.

French 6. CLASSICAL DRAMA. Three hours credit.

Latin 5. LIVY. Three hours credit.

Latin 6. CICERO'S PHILOSOPHY AND LETTERS. Three hours credit.

Latin 7 and 8. HORACE. Odes and epodes, two hours credit; satires and epistles, two hours credit.

Latin 51. Supplementary Latin and Composition. Two hours credit.

Spanish 1. Elementary. Five hours credit. Open only to those who have a speaking knowledge of the language.

Spanish 2. Intermediate. Five hours credit. May be divided like French 2.

Spanish 3. Spanish-American Literature. Three hours credit.

Spanish 4. Commercial Spanish. Three hours credit.

Special Note. Mature students may apply any course numbered 1, 2, 3, or 4, on entrance credit. Other courses will be given informally to advanced students.

GEOGRAPHY.

Eulalia E. Roseberry, Professor.
Bessie Ashton, Assistant Professor.

BY EXTENSION OR CORRESPONDENCE.

Course 2. Industrial Geography. This course includes geography of agriculture, textiles, food products, minerals, manufactures, fishing, lumbering and commerce. It is designed to correlate with other industrial subjects. This is one of the most practical courses offered for teachers actively engaged, as it supplements all other courses, and has workable material for all grades. Three hours credit.

Course 3. Geography of American History. This course is designed especially to correlate with the American history courses, and consists of a study of geographic conditions which have influenced the course of American history, and of their importance as compared with one another and with nongeographic factors. Three hours credit.

Course 4. Geography in Primary Grade Work. This course is designed especially for teachers of nature study and of primary grades and for those doing departmental work in geography. The work consists largely of selection and adoption of material best suited to the first four grades and to the method of presentation. Three hours credit.

Course 5. Geography in Intermediate and Grammar Grade Work. This course encompasses subject matter and methods for the grades above the fourth, and is designed for grade and rural teachers and those doing departmental work in geography. Three hours credit.

Course 6. Commercial Geography. This course is organized to give the student a scientific knowledge of the three distinctive sets of controls—the natural, the human, and the economic. It correlates not only with the other commercial courses, but with the industrial subjects as well. Three hours credit.

Course 8. Topography. This course gives opportunity for studying mapped areas in detail, as to relief, drainage and cultural features. One, two or three hours credit.

Course 11. The Geography of North America. Every teacher should have an accurate and extensive knowledge of the geography of North America. This course will consist not only of an intensive study of the geographic controls of the continent as a whole, but also of an intensive study of Canada, United States and Mexico, the geographic factors that have influenced their development, their present commercial and industrial status, and their future possibilities. This course will furnish a scientific basis for the study of other continents and also illustrate the best methods of teaching these units to grade pupils. Three hours credit.

Course 51. THE GEOGRAPHY OF SOUTH AMERICA. Present-day conditions have created a demand for information concerning our South American neighbors. The course is designed to answer this demand. Some of the topics considered are: The surface features, climate, resources of South America; the historical background of the republics; the factors upon which rest the commercial and industrial development of the various nations; their present status; the basis and character—present and future—of trade between United States and South America; what opportunities there are in South America for Americans.

One of the chief difficulties in the way of the best understanding, commercially and politically, between the United States and the South American republics has been our ignorance concerning conditions there. The National City Company of New York and other companies with large interests in South America have found it necessary to establish classes to give their employees sufficient knowledge of the geography of South America to carry on their business intelligently. This course is designed to answer this demand from business as well as to supply the teachers with accurate and interesting information for their work. Three hours credit.

Course 52. GEOGRAPHY OF EUROPE. Every teacher should have a knowledge of the elements underlying the relationship existing between ourselves and the nations of Europe. Our increased interest in the European nations demands that not only the teacher must have this knowledge but should be able to teach it to the future voters and statesmen of our nation. This course has been organized for the purpose of putting the teachers in touch with subject matter in such a manner that they may become as familiar with the situations in the countries of Europe as with those of the United States. Our new responsibilities demand that our teachers must give more attention to this problem than they have in the past. Three hours credit.

Course 55. CLIMATOLOGY. This course considers in addition to climatic causes and effects in general the climatic regions of the United States and the continents and their relation to physiographic features, climate as a modifying factor of crops, animal life and people of the country. Three hours credit.

HISTORY AND SOCIAL SCIENCE.

G. W. TROUT, Professor of History and Social Sciences.
O. F. GRUBBS, Associate Professor.
LILLIAN LUEHRS, Assistant Professor.
J. W. BOWERS, Associate Professor.

This department is trying to serve the needs of our constituency as broadly as possible. However, the number of courses which we can offer is somewhat limited by the large amount of organized extension work the department is doing.

BY CORRESPONDENCE.

Course 1. GREEK HISTORY. A general survey of ancient Greece from the earliest period to its conquest by Rome. The course consists of sixteen lesson assignments based upon a textbook, and a review of one other book. Two hours credit.

Course 2. ROMAN HISTORY. This course takes up Rome at the earliest date and follows her career to the fall of the western empire. The course consists of sixteen lesson assignments based upon a textbook, and a summary of one other book. Two hours credit.

Course 3. MEDIÆVAL HISTORY. A survey of western Europe from the fall of Rome to the opening of the Renaissance. The course consists of twenty-four lesson assignments based upon two textbooks. Three hours credit.

Course 4. MODERN HISTORY. A brief course in the history of western Europe from the opening of the Renaissance to the outbreak of the French Revolution. The course consists of twenty-four lesson assignments based upon a textbook and an outline of one other book. Three hours credit.

Course 5. ENGLISH HISTORY. A general survey of the whole range of English history down to the present time. The course consists of forty lesson assignments based upon two textbooks, and one or more themes on phases of current English life, based upon magazines. Five hours credit.

Course 56. MODERN EUROPE. A brief view of nineteenth century Europe since the Congress of Vienna. The course consists of sixteen lesson assignments from one textbook. Two hours credit.

Course 51. INDUSTRIAL HISTORY OF UNITED STATES. A careful study of our national resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to present times. This course consists of twenty-four lesson assignments based upon two texts. Three hours credit.

BY EXTENSION.

Course 5. ENGLISH HISTORY. A general survey of the whole range of English history down to the present time. Special attention to rise of English government and institutions and their relation to our own. Outlines will be used and special readings assigned, papers prepared and presented. Five hours credit.

Course 6. AMERICAN HISTORY I. This is a thorough college course covering the subject of American history for mature students and teachers who may want to strengthen themselves in the teaching of the subject. Four hours credit.

Course 51. INDUSTRIAL HISTORY. A careful study of our natural resources, growth of population, expansion of territory, invention of labor-saving machinery, and industrial growth and development from the discovery of America to present times. Besides the use of a text the students are required to prepare weekly themes from library assignments. Three hours credit.

Course 52. ECONOMICS. This course deals with the theories and principles of man's activities in the satiation of human wants. It applies these principles and theories to the production and consumption of wealth. It aims to lay well the foundations for advanced work along this line. Five hours credit.

Course 7. CONSTITUTIONAL HISTORY. A study of the evolution of the American constitution, its interpretation and application to the times. Two hours credit.

Course 53. POLITICAL SCIENCE. In this course we study the theories and functions of the modern state as exemplified in the leading nations of the world. Also careful observation of likenesses and differences of these states. Two hours credit.

Course 56. MODERN EUROPE. Beginning with 1815 governmental change and progress of the countries of Europe are studied. Special emphasis is laid upon the rise of popular government, the formation of political parties and the limitation of monarchies. Two hours credit.

Course 57. TEACHING HISTORY. Open to all students majoring in history or those who have had at least fifteen hours in history and expect to teach it. Two hours credit.

Course 60. HISTORY OF THE REFORMATION. This course is preceded by a brief survey of the rise of the Christian Church, its institutions and doctrinal development. Special emphasis is laid upon the causes leading to and the great agents employed in the Reformation. Three hours credit.

Course 63. AMERICAN HISTORY II. This course covers the period from 1750 to 1829. It is a study of those forces and events which helped to create a national ideal and a national spirit. It deals with those contributions and political problems from within and from without which tended to weld our people into one sovereign state. Two hours credit.

Course 64. AMERICAN HISTORY III. This course is a study of the difficulties and dangers threatening the life of a nation, together with the forces that contributed to our marvelous progress. It covers the period from 1829 to date. Two hours credit.

Course 58. SOCIOLOGY. An introductory study of the nature, function and development or progress of society. The aim is to familiarize the student with society and some of its problems and cultivate a desire to aid in the solutions of these problems. Three hours credit.

Course 59. APPLIED SOCIOLOGY. In this course we endeavor to apply the principles of sociology to present-day problems. Course 11 is a prerequisite. Two hours credit.

Course 67. LATIN AMERICA. A brief study of the history and traditions of our neighbors to the south—Mexico, Central and South America—with emphasis upon their social, racial and economic development, and their relation to Europe and to the United States. Two hours credit.

Course 70. EUROPE FROM 1870 TO DATE. This course takes up the political problems of Europe since the formation of the German empire and traces them in reference to the Great World War. Two hours credit.

Course 21. CIVIL GOVERNMENT IN THE UNITED STATES. The purpose of this course is to study the structure and functions of the government of the United States, local, state, and national. Such topics will be considered as the constitutional development of American government, the powers and activities of various organs of government and administration, and proposed reforms within the field of American government. Special emphasis will be laid upon the relation of American state governments to contemporary economic and social problems. Five hours credit.

Course 68. RURAL SOCIOLOGY. A study of rural life in its relation to its social centers, with special reference to the rural church, school and other social centers. Two hours credit.

Course 69. FINANCIAL HISTORY OF UNITED STATES. A brief review of the methods of raising revenue in United States, the nature of the circulating medium and the relations of our banking systems to our national life, past and present. This course coördinates with course 51. Two hours credit.

INDUSTRIAL ARTS.

A. H. WHITESITT, Professor.
CHAS. F. KOPP, Assistant Professor.

BY CORRESPONDENCE.

VOCATIONAL GUIDANCE. The time is at hand when more than mere ability to impart information is demanded of the teacher. The man or woman who has an understanding of the problems and difficulties which face the student when making the transition from the life of the school to that of self-support, and who has the information which enables him or her to assist the boy or girl when making this adjustment, has an opportunity to render a great social service to the boys and girls of the community.

The purpose of this course is to give an insight into the theory and practical working of this field. Elective. Two hours credit.

Course 1. ELEMENTARY MECHANICAL DRAWING. Proficiency in the use of drafting instruments, knowledge of the conventions and methods of drafting-room practice, an understanding of projection and working drawings through the making of a series of working drawings. Lettering exercises, both capitals and lower case. Directions for sharpening the pencil and laying out the sheet. Line conventions; use and care of the ruling pen. Geometrical constructions include lines, angles, polygons, circles and tangents. Orthographic projection study of first and third angle. Projection of line, point and solids on planes. Each problem begins with the making of a sketch in pencil and then a penciled working drawing, followed by an inked tracing and a blue print.

The importance of good workmanship is emphasized throughout the course and good technique is required. Two hours credit.

Course 3. PROJECTION DRAWING. Analytical study of orthographic projection of line, points and solids. Fundamentals of projection are emphasized in problems dealing with revolutions, sections, intersections and surface developments—pattern development suitable for use in sheet-metal work.

A study of pictorial projects such as isometric, oblique or Cavalier and Cabinet projection. Prerequisite, course 1. Two hours credit.

Course 4. FURNITURE DESIGN. The dominating purpose throughout this course is to stimulate in the student a conception of furniture as an expression of beauty. The course consists of a series of problems from the design of simple chairs and tables to more complex types of furniture. Emphasis is placed upon the development of types with modern adaptations. Rendering in colors is a feature. Prerequisite, courses 1 and 3. Two hours credit.

Course 5. ELEMENTARY MACHINE DRAWING. A study of standard bolts, nuts, screws, keys and pins with their standard conventions. Use of tables and machinist and engineer hand books. Drawing of machine parts such as hand wheels, eccentric sheave, engine crank, connecting rod end, crane hook, clutch coupling, piston rod, stuffing box, etc. Execution of working sketch of casting on regular cross-section paper, followed by working drawing, tracing and blue print.

Study of cam motions and simple elementary gearing. Prerequisite, courses 1 and 3. Two hours credit.

Course 6. ADVANCED MACHINE DRAWING. A course planned to meet the needs of those who teach in the more advanced high schools and those who may wish to engage in commercial shop drafting. The course deals largely with the theory applied in practical work in the transmission of power by means of belt and rope drives, cams and crank motions, gears—spur, rack and pinion, worm gear, internal gear; graphics, and the design of special apparatus. Prerequisite, courses 3 and 5. Two hours credit.

Course 12. ELEMENTARY ARCHITECTURE. A practical course in reading and understanding house plans. The course deals directly with the requirements of the prospective home builder. A study is made of a typical plan which will involve the essential elements of a modern home, one- and two-story, with reference to location, lot, finance, suitable plan, arrangement of rooms for convenience, light, sanitation and heat, materials and cost. Prerequisite, course 1. Two hours credit.

Course 13. ARCHITECTURAL DESIGN. The designing of a modern residence with reference to its location, plan, convenience, sanitation, heating, lighting, and materials. Working plans and elevations, with detail drawings of special interior and exterior constructions. The instructions must conform to the actual practice in building operations. Each student is expected to design a house which he would build for himself. Other constructions, as schoolhouse, barn, etc., may be substituted or included. Prerequisite, course 12. Two hours credit.

HOME ECONOMICS.

Zoe Wolcott, Professor.
Agnes Saunders, Professor.
Anne Marriott, Assistant Professor.
Evelyn Metzger, Assistant Professor.
Edith Casseday, Assistant Professor.
Jane Cape, Assistant Professor.

FOODS AND NUTRITION.

By Extension.

Course 1. Elements of Cookery. This course is planned for students who have not had a course in food preparation in high school. It develops skill in the technique of cookery, and takes up a thorough study of foods; kinds, growth, preparation for market, composition, digestibility and fuel value. Three hours credit. A fee is charged to cover materials used in laboratory.

Course 2. Foods and Cookery. This is a continuation of course 1. The two courses cover a study of beverages, cereals, vegetables, batters and dough, meats and poultry, fish, eggs, milk, and cheese. Following this scientific study of foods, preliminary work in serving and making menus is taken up. Three hours credit. A fee is charged to cover materials used in laboratory.

TEXTILES AND CLOTHING.

Course 1. Sewing and Garment Making. This is primarily a teacher-training course designed to teach the fundamental elements of sewing to develop technique, to present suitable problems in single garment construction and methods of teaching such problems, and to develop a sense of comparative values in materials, labor and time. Three hours credit. A laboratory fee is charged.

Course 2. This is a continuation of course 1. Greater emphasis is placed upon developing a freer use of commercial patterns by alterations, and upon the principles of fitting and good lines. The garments made in the laboratory are a middy, tailored skirt and tailored linen or cotten dress. Three hours credit. A laboratory fee is charged.

HOME ECONOMICS EDUCATION.

Course 51. Food Hygiene Education. The course deals with the teaching of foods in relation to health. It includes a survey of modern methods to overcome malnutrition; to interest pupils and teachers in health work; to correlate nutrition with academic and vocational subjects and to secure coöperation of all agencies to develop and maintain health standards. Three hours credit.

RELATED ART.

Course 52. History of Furniture. This course is to help the student to understand the history of furniture through the important period styles, so that he may the more easily make selections from designs on the market with an appreciation of modern requirements. One hour credit.

Course 53. History of Costume. This course is to help the student appreciate the history of costume and its relation to the development of modern designs. One hour credit.

FOREIGN LANGUAGES.

Samuel J. Pease, Professor.
Ernest Bennett, Associate Professor.

BY EXTENSION.

French 1 (*a*) Fraser and Squair: Shorter French Course, lessons 1 to 30. About fifty pages of easy reading. Three hours credit.

French 1 (*b*) Fraser and Squair: Lessons 31 to 52, with the commoner irregular verbs. About 100 pages of easy reading. Three hours credit.

Latin 11. Latin in English. An introductory study, from the historical standpoint, of the universality of the influence of Latin on modern thought and language, especially on English vocabulary, orthography, grammar, rhetoric, literature, science, law and government, art. Lectures, exercises, assigned readings. Two hours credit.

Spanish 1 (*a*) Hills and Ford: First Spanish Course, lessons 1 to 26. Bransby's Reader, about 40 pages. Three hours credit.

Spanish 1 (*b*) Hills and Ford and Bransby completed. Additional reading. Three hours credit.

Course 7. Outline of Spanish Literature. Text: Fitzmaurice-Kelly's Spanish Literature. Lectures alone, open to all, one hour credit; with readings in English or Spanish, three hours credit.

Course 8. Outline of Latin-American Literature. Text: Coester's Literary History of Spanish America. Lectures alone, open to all, one hour credit; with readings in English or Spanish, three hours credit.

Any other course in the department will be given on sufficient demand.

Not more than three hours credit may be given for any one course by extension.

BY CORRESPONDENCE.

French 1. Elementary. Five hours credit. Open only to those who have a speaking knowledge of the language.

French 2. Intermediate. Five hours credit. May be divided: three hours grammar and composition, two hours reading and exercises.

French 3. Modern Writers. Three hours credit.

French 4. Classical Drama. Three hours credit.

French 9. Science. Two hours credit.

Latin 5. Livy. Three hours credit.

Latin 6. Cicero's Philosophy and Letters. Three hours credit.

Latin 7 and 8. Horace. Odes and epodes, two hours credit; satires and epistles, two hours credit.

Latin 51. Supplementary Latin and Composition. Two hours credit.

Spanish 1. Elementary. Five hours credit. Open only to those who have a speaking knowledge of the language.

Spanish 2. Intermediate. Five hours credit. May be divided like French 2.

SPANISH 3. SPANISH-AMERICAN LITERATURE. Three hours.

SPANISH 4. COMMERCIAL SPANISH. Three hours credit.

SPECIAL NOTE.—Mature students may apply any course numbered 1, 2, 3, or 4, on entrance credit. Other courses will be given informally to advanced students.

MATHEMATICS.

J. A. G. SHIRK, Professor.
C. O. VAN DYKE, Associate Professor.
AGNES CROW, Assistant.

BY CORRESPONDENCE.

Course 1. PLANE GEOMETRY. The general properties of plane rectilinear figures; the circle and the measurements of angles; regular polygons; solution of numerous original exercises and practical problems. Open only to students not offering geometry for entrance. Three hours credit.

Course 2. SOLID GEOMETRY. Elements of solid geometry; properties and measurements of surfaces and solids. Open to all students not offering solid geometry for entrance. Two hours credit.

Course 3. ADVANCED ALGEBRA. This course corresponds to the work of Algebra III of a high school, and is open only to those students who have not taken Algebra III in their high-school course. It includes a review of linear and quadratic equations, radicals, involution, evolution progressions, logarithms, and imaginaries. Two hours credit.

Course 4. COLLEGE ALGEBRA. Rapid review of elementary algebra; graphic representation; complex numbers; series, logarithms; theory of equations; Horner's method. Three hours credit. Prerequisite, course 3.

Course 5. PLANE TRIGONOMETRY. The solution of the right and the oblique triangle; trigonometric equations; goniometry; graphs of trigonometric functions; practical problems. Two hours credit. Prerequisites, same as College Algebra.

Course 8. INDUSTRIAL MATHEMATICS. This course is designed especially for teachers of mechanic arts, but it is also useful for teachers of mathematics who wish to vitalize the teaching of mathematics by the use of practical problems. It includes the slide rule; short methods; checks; mensuration of plane and solid figures; logarithms; the trigonometric solution of the right triangle; the micrometer and vernier calipers; graphic computation; and elementary mechanics. Practical problems are selected according to the needs of the student, and includes the mathematics of woodworking; house building; power transmissions; pulleys; belts; pattern making and foundry work; metal working; tapers; cutting speeds; thread proportions; steam and gas engines. Three hours credit. Prerequisite, two units of High-school Mathematics, one unit of Physics, or an equivalent experience in Mechanic Arts.

BY CORRESPONDENCE OR EXTENSION.

Course 9. VOCATIONAL MATHEMATICS. This course is designed especially for women, and contains samples of problems from all occupations that women are likely to enter, from the textile mill to the home. Food computations; house construction; house furnishing; dressmaking and millinery; arithmetic for office assistants, sales girls, cashiers and nurses; and a thorough drill in the metric and English systems of weights and measures. Three hours credit. This is an excellent course for teachers of arithmetic.

Course 52. DESCRIPTIVE ASTRONOMY. A general course in descriptive astronomy, dealing with the solar system and theories regarding its evolution; nebulæ; comets; meteors; measurements of the earth; determination of standard time. Two hours credit. Prerequisite, High-school Algebra, Geometry and Physics. This course will be of great value to teachers of geography and nature study.

RURAL EDUCATION.

EDGAR MENDENHALL, Professor of Rural Education.
————, Rural Critic Teacher.

BY CORRESPONDENCE.

Course 15. THE SCHOOL AND THE COMMUNITY. Methods and plans for making community surveys; the school a social and recreational center; parent-teachers organizations; boys' and girls' clubs; entertainment programs for community meetings; community resources in teaching the fundamental subjects. Two hours credit.

BY EXTENSION.

Course 16. STANDARD TESTS AND MEASUREMENTS IN IMPROVING INSTRUCTION IN RURAL SCHOOLS. Practical training in the use of the standard reading, writing, arithmetic, spelling, and history tests and scales in order that the rural-school teachers may compare the work of rural pupils with each other and with the attainment of pupils of cities. Two hours credit.

SECTION IX.

Commerce.

COMMERCIAL TEACHERS' COURSE.

E. F. Sholtz, Professor.
Walter S. Lyerla, Assistant.
L. C. Guffey, Assistant.

The present condition of our country has brought us face to face with the great need of more and better trained business people, and caused us to realize, as never before, the importance and dignity of this work in our present-day school system.

Every progressive high school has a department of business training. Many new departments are being installed in the junior high schools as well as the senior high schools. Therefore, the demand for commercial teachers is much greater than the supply. The salaries offered are good. Our Special Life Diploma in Commerce, given upon the completion of this course, entitles the holder to teach in senior high schools.

FRESHMAN YEAR.

Students who are high-school graduates or equivalent, upon completion of the course in Commerce, and who elect Psychology 3 hours, Methods 2 hours, Modern Education 3 hours, Practice Teaching 3 hours, and Elective 3 hours in Education, will be entitled to a Life Certificate in Commerce. Those who do not desire a Life Certificate in Commerce, see course on page 235. Students pursuing degree courses may elect 8 hours of commerce work.

First Semester:	*hrs.*
Bookeeping (1)	4
Business Arithmetic	3
Commercial Geography (6)	3
Penmanship (4)	1
Electives	4
Physical Education	1
	16

Second Semester:	*hrs.*
Bookkeeping and Accounting (2)	4
Commercial Algebra (11)	3
Business Law (3)	2
Penmanship (5)	1
Parliamentary Law (61)	2
Electives	3
Physical Education	1
	16

SOPHOMORE YEAR.

First Semester:	*hrs.*
Shorthand (6)	5
English (1)	4
Commercial Methods (10)	1
Typewriting (8)	2
Electives	4
	16

Second Semester:	*hrs.*
Dictation and Office Practice (7)	5
Epic (2)	4
Salesmanship (11)	2
Typewriting (9)	2
Electives	3
	16

FIRST YEAR.

Course 1. Bookkeeping. Double-entry drills. Thorough drill in application of laws of debit and credit. Handling of checks, notes, drafts, and other business vouchers. Opening and closing entries of partnership accounts. First semester. Five hours credit.

Course 2. Bookkeeping and Accounting. Consignments, corporation accounts. Manufacturing and trading accounts. Practical problems. Prerequisite, course 1. Second semester. Five hours credit.

Course 3. Business Law. Utility of the subject. Sources and authority of our laws. Contracts, bailments, sales, negotiable instruments, credits and loans, guaranty and surety, agency, partnership, insurance and corporations. Second semester. Two hours credit.

Course 4. PENMANSHIP. Movement drills. Study of letter forms. Home work. First semester. One hour credit.

Course 5. PENMANSHIP. Continuation of study of forms. Developing of rapid business hand. Home work. Second semester. One hour credit.

Course 12. BUSINESS ARITHMETIC.

Course 5. COMMERCIAL GEOGRAPHY. See Geography course.

COMMERCIAL ALGEBRA (11). See Mathematics course.

PARLIAMENTARY LAW (61). See History course.

SECOND YEAR.

Course 6. SHORTHAND. Complete the Gregg Manual. Special study of form and movement. Some dictation. First semester. Five hours credit.

Course 7. DICTATION AND OFFICE PRACTICE. Special drills. Actual office practice. Care of faculty correspondence. Speed of 125, new matter. Prerequisite, course 6. Second semester. Five hours credit.

Course 8. TYPEWRITING. Complete Ross Method. One hundred charts and finger exercises. First semester. Two hours credit.

Course 9. TYPEWRITING. Speed drills. Copy work, 60 words per minute, perfect work. Prerequisite, course 9. Second semester. Two hours credit.

Course 10. METHODS. This course deals with the pedagogical and professional phase of commercial work. The fundamental theory underlying the subjects of the curriculum is emphasized and shown by concrete illustrations. Special methods of instruction, problems and difficulties peculiar to the teaching of each subject, presentation of subject matter, content and arrangement of material, organization and administration, are carefully discussed. The work is conducted by means of recitations, reference readings, lectures, and written reports. First semester. One hour credit.

Course 11. SALESMANSHIP. Applied psychology in the art of selling. Viewpoint of salesman and purchaser is studied. Study of characteristics that make a good salesman. Two hours credit.

ENGLISH (1). See English course.

EPIC (2). See English course.

VOCATIONAL COURSES.

STENOGRAPHY AND BOOKKEEPING.

Every person, sooner or later in life, is confronted with these questions: What can I do? How can I earn a living and make the most of myself? How can I make an income sufficient to provide a few of the luxuries, as well as the necessities of life, and still have something left for old age?

One of the objects of supreme importance in every life is how to make a living. To do this in this day of competition one must be able to do some one thing, and to do that one thing extraordinarily well. The mind and energy of almost every one you meet is of necessity centered on these questions, and how to accomplish these few things. When a boy or girl finishes high school, grammar school or college these questions he meets face to face, for it then becomes necessary for him to strike out—do something—to make a living. Wise is the boy or girl who will acquire that special kind of training that will enable him to gain his start in congenial and remunerative employment, that will enable him to merit promotion and attain ultimate success, for without a proper start the arriving at a satisfactory end and the achievement of success are impossible. With these thoughts in mind we have planned two short courses of intensive training—the stenographic and bookkeeping courses.

SHORT BUSINESS COURSE. This course is planned for those desiring to prepare for general office work. The course may be pursued as planned, or such subjects as one desires may be selected. Those wanting to prepare for teaching commerce, see Commercial Teachers' Course, outlined elsewhere.

HOW LONG DOES IT TAKE? We can understand why parents and students wish to know about how long it is going to take to complete a course. We will say, however, that the question is a pretty hard one to answer, inasmuch as so much depends on the student himself. His previous education, his industry, and the number of hours daily and at night he devotes to study must be considered. In our school every student has a certain amount of work to do and must do it regardless of the time it takes. By our individual method of instruction, no one is held back nor pushed forward and each stands on his own foundation. This is the advantage over the class method. But the work is planned so the student of average ability can complete the work in eight or nine months. Some may do it in less time.

MUST THE COURSE BE PURSUED AS PLANNED? No. One may take only such subjects as he desires. However, only the essentials are put in the course, and we recommend they be taken as planned.

POSITIONS. After completing these courses our students are capable of taking up office work at good salaries from the beginning. We do not guarantee positions for our students, but assist them. Our students have been doing this, and what others have done you can do. No well-qualified person need long look for a position. The postion will seek him.

TUITION. The tuition for this work is a very small fee: $7 for incidentals, $2.50 for activity ticket, and 50 cents hospital fee per term of 18 weeks. A small rental for use of typewriter unless the student furnishes his own.

STENOGRAPHIC COURSE.

Shorthand.
Letter Writing.
Typewriting.
Penmanship.
Business English.
Spelling.

BOOKKEEPING COURSE.

Bookkeeping.
Penmanship.
Business Law.
Business Arithmetic.
Rapid Calculation
Salesmanship.

BOOKKEEPING. General law of debit and credit. Use of journal, cash book, purchase book, sales book, and making of all business statements. Handling of notes, drafts and checks. Shipments and consignments. Some corporation work.

BUSINESS ARITHMETIC. Solving actual business problems; working time sheets; practical measurements; study of short methods.

PENMANSHIP. Developing of a plain, legible, rapid, business hand.

APPLIED BUSINESS ENGLISH. Careful study of business phrases. Rules for punctuation, and drills in their application.

LETTER WRITING. Study of letter forms; writing all classes of business letters, with enclosures; learn to do by doing; careful study of postal regulations and different classes of mail matter.

TYPEWRITING. Writing of charts; care and repair of machines; drills for speed; working of speed to forty words per minute.

SPELLING AND BUSINESS FORMS. Study of roots, prefixes and suffixes; spelling drills; study of checks, notes, drafts, deeds, mortgages, and writing of same.

HIGH SCHOOL COMMERCIAL COURSE.

A certificate is given for the completion of this course; also, two years' college work is given in Commerce, leading to a life diploma.

FIRST YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Booking	½	Bookkeeping and Accounting	½
Business Arithmetic	½	Business Arithmetic	½
Commercial Geography	½	Business Law	½
Penmanship	¼	Penmanship	¼
Elect	¼	Advanced Grammar	½

SECOND YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Shorthand	½	Dictation and Office Practice	½
Applied Business English	½	Commercial Correspondence	½
Spelling and Business Forms	½	Typewriting	½
Typewriting	½	Elect	¼

BOOKKEEPING. General law of debit and credit. Use of journal, cash book, purchase book, sales book, and making of all business statements. Handling of notes, drafts and checks. Shipments and consignments. Some corporation work. Year subject. One unit credit.

BUSINESS ARITHMETIC. Solving actual business problems. Working time sheets. Practical measurements. Study of short methods. Year subject. One unit credit.

PENMANSHIP. Developing of a plain, legible, rapid business hand. Year subject. Half unit.

SHORTHAND. Complete study of the manual. Text, Gregg. Twenty weeks. Half unit.

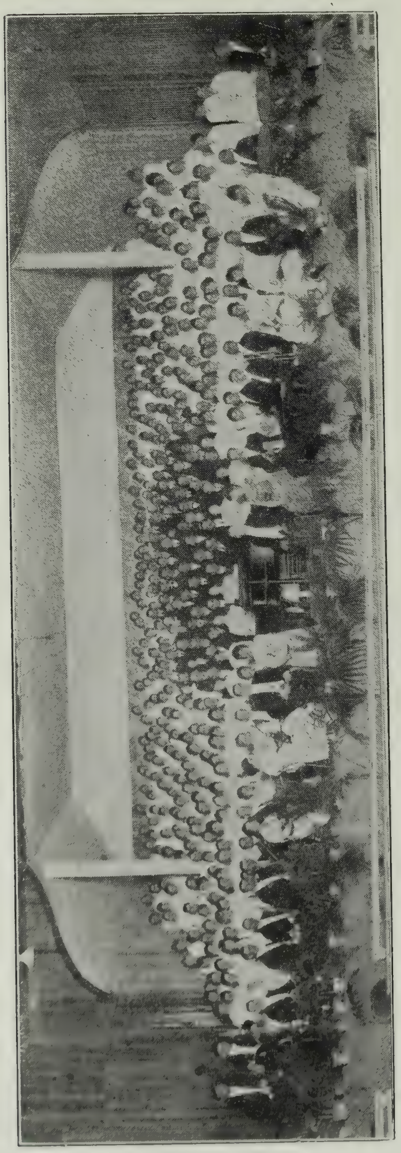
DICTATION AND OFFICE PRACTICE. Advanced shorthand. Taking of dictation from new matter. Working speed to 100 words per minute. Court testimony. Doing actual office work. Twenty weeks. Half unit.

APPLIED BUSINESS ENGLISH. Careful study of business phrases. Rules for punctuation, and drills in their application. Twenty weeks. Half unit.

COMMERCIAL CORRESPONDENCE. Study of letter forms. Writing all classes of business letters, with enclosures. Learn to do by doing. Careful study of postal regulations and different classes of mail matter. Twenty weeks. Half unit.

TYPEWRITING. Writing of charts. Care and repair of machines. Drills for speed. Working of speed to forty words per minute. Year subject. One unit.

SPELLING AND BUSINESS FORMS. Study of roots, prefixes and suffixes. Spelling drills. Study of checks, notes, drafts, deeds, mortgages, and writing of same. Twenty weeks. Half unit.



MESSIAH CHORUS.

SECTION X.

Music.

THE FACULTY.

William A. Brandenburg, Ph. B., President.
Walter McCray, Director of Music.
R. Hesselberg, Professor of Violin.
Anthony Stankowitch, Professor of Piano.
Elizabeth Hallenbeck Gilbert, Professor of Voice.
Winona McLatchey, Instructor in Public-school Music and Harmony.
Helen Gibson, Instructor in Piano.
Nora Neal, Assistant Professor of Piano.
Frank Deerwester, A. D., Pd. M., Pd. D., Associate Professor in Psychology.
May Long, Director of Physical Education for Women.
Regina Frank, Assistant Director of Physical Education for Women.
G. W. Weede, B. S., D. D. S., Director of Physical Education for Men.
D. M. Bowen, A. B., Professor of Education.

MUSIC DEPARTMENT.

Walter McCray, Director.
Anthony Stankowitch, Piano.
Nora Neal, Piano.
Helen Gibson, Piano.
Elizabeth Hallenbeck Gilbert, Voice.
Winona McLatchey, Public-school Music.
Rhetta Hesselberg, Violin.
Matthew Redpath, Cornet.
William Schrieb, Wood-wind Instruments.

GENERAL INFORMATION.

1. All students must be enrolled before they can get their lesson assignments.

2. All lessons must be paid for in advance, or a written statement secured from the president extending time of payment.

3. Lessons missed on account of sickness will be made up, if the teacher or director of music is notified prior to the lesson period.

4. Lessons on dismissal days must be made up as arranged and announced by the department.

5. Piano, voice and violin are thirty-minute periods. Promptness is required so as not to infringe on the time of the following period.

6. The semester of eighteen weeks is divided into two music terms of nine weeks each, requiring an enrollment every nine weeks in all music subjects.

7. Department of Music of S. M. T. N. offers courses as complete as any of the leading conservatories of music. Every teacher is an artist in his special line, which gives students the advantages of a larger city.

8. Students will be admitted to this department at any time during the year, but advantages are generally better if entrance is made at beginning of semester.

9. Reasonable credit is given for all music work. Music may be an elective in any course in the institution.

10. There are several musical organizations in which talented students not in this department may take part. Among them: The Male Glee Club, the Polymnia Club, the Orchestra, the Band, and a Mixed Chorus.

11. Concerts are given during the year, and in the spring all organizations unite with musicians of surrounding communities for a week's "Spring Musical Festival."

ENTRANCE REQUIREMENTS.

For entrance to all courses leading to a degree or a diploma, the candidate for admission shall furnish proof that he is a graduate of an accredited high school in Kansas; or, if he be from another state, that he is a graduate of a high school accredited in the state from which he comes. Failing either of these, he shall furnish proof that he has completed fifteen academic units of high-school work or the equivalent.

COURSES LEADING TO A TEACHER'S CERTIFICATE.

The courses leading to a teacher's certificate in piano, organ or violin shall consist of the same subjects as for the first three years of the courses leading to a degree or a diploma, omitting the studies in the college and substituting therefor one hour per week, for two semesters, of normal training in the major subject, and one hour per week, for two semesters, of practice teaching under the supervision of the normal training instructors.

CHILDREN'S DEPARTMENT.

In addition to our regular music courses it has been decided to offer a course in piano for children. A very competent teacher will be placed in charge, under the direction of the head of the Piano Department. The tuition will be $9 for eighteen lessons. Children under twelve years admitted.

COURSES LEADING TO A DEGREE.

All candidates for a degree shall offer at least twelve hours of theory and four hours of history of music.

All candidates for a degree offering major credits in piano, organ or violin shall also offer not less than fifteen hours of college work, of which at least ten shall be in English.

All candidates for a degree offering major credits in voice shall also offer not less than twenty-five hours of college work, of which not less than ten shall be in English, and not less than ten in modern foreign languages.

Piano, voice and violin, one lesson per week for a semester, with three hours practice, leads to one semester hour's credit.

Those students majoring in music, and desiring their degree to be a life certificate to teach in the public schools of Kansas, must take the required hours in Education.

MAJOR. At least thirty hours will be required in the major in this course.

MUSICAL ORGANIZATIONS.

THE MALE GLEE CLUB. This club is chosen from the more able singers of the School. They meet twice each week.

THE POLYMNIA CLUB. This is the girls' glee club, whose organization is controlled in a like manner to the Male Glee Club.

ORCHESTRA. The orchestra is composed of students and musicians from the city, who have had years of experience. This organization gives concerts during the school year.

THE BAND. Those who have instruments and have had some experience are admitted to this organization.

THE CHORUS. The chorus is composed largely of the two glee clubs; however, it is open to all students who are able to sing and are somewhat proficient in reading music at sight. In this work, parts or the whole of the standard cantatas, oratories, etc., are used, and the chorus very frequently appears in public during the year. The value of this practice cannot be overestimated, and it is indispensable to vocal students and school-music teachers. There is no expense connected with this work.

VOICE COURSE.

FRESHMAN YEAR. Special attention is given to correct placement of the voice; a systematic course in breathing, sustaining tones, scales and exercises; true legato; a careful analysis of vowels and consonants in relation to vocal needs, sight singing; songs for phrasing and enunciation. The voice is greatly aided by the theory courses given in the Department of Music. Technical exercises from Marchesi Practical Singing Methods, Sieber Vocalises, Panofka, Abt, which form an excellent foundation. Easy songs with simple melody are given.

SOPHOMORE YEAR. A continuation of scales and exercises by Marchesi, Panofka, Concone, Sieber, suited to the needs of the pupils. Development of tone and breath control, exercises for flexibility emphasized. Songs by modern composers in English and Italian.

JUNIOR YEAR. Exercises by Marchesi, Lamperti, Marzo, Bordogni for flexibility, tone color, and true legato are continued. Special attention is given to stage deportment, style and interpretation. Songs of the seventeenth and eighteenth centuries, together with modern works, are analytically studied, preferably in the original text. A junior recital given by the students for credit toward a degree may be elective.

SENIOR YEAR. Exercises for bravura, singing from Marchesi, Lamperti, and Marzo for flexibility and artistic finishing of tone. Selections from oratorio and opera songs in modern Italian and French, standard English and American works. A senior recital given by the students for credit toward a degree is required. At frequent intervals public and private recitals are given in which all capable students are required to take part, thus preparing them for the concert stage, for church and public work. Senior recitals are given by special appointment.

VIOLIN COURSE.

Candidates for diplomas must be equal to the interpretation of solo sonatas by Bach, concertos by Vieuxtemps, Mozart, Wieniawski, Spohr, Mendelssohn, and some modern compositions, as Kreisler and Saint-Saëns.

It is impossible to write out exactly the course of studies pursued in this department. Each pupil will receive those exercises and pieces which the particular case requires. Candidates for certificates must give a good performance of a piece approximating in technical and music difficulty works like concertos by Viotty and Rode, and they must have studied the etudes of Kreutzer and Dont, and the scales of Halier.

MUSIC SUPERVISOR'S COURSE.

The growing demand for thoroughly trained teachers and supervisors of public-school music has induced this School to establish this department as a special feature.

The supervisor's course not only requires a thorough knowledge of piano, voice, harmony, counterpoint, history of music, sight singing, chorus conducting, and orchestration, but each student must do practice teaching in the Model School under direction of critic teacher.

A class for benefit of grade teachers who desire a knowledge of the rudiments of music is organized each semester. Class meets daily and full credit is given.

FRESHMAN YEAR.

First Semester:	*hrs.*	*Second Semester:*	*hrs.*
Expression	3	History of Music (1 day)	2
Sight Singing (4 days)	2	Psychology	3
History of Music (1 day)	2	Voice	2
Voice	2	Piano	2
Piano	2	Harmony (2 days)	2
Physical Education (1)	1	Teaching 5, Lectures (1 day)	2
Teaching 5, Lecture (1 day)	2	Physical Education (2)	1
Harmony	2	Conducting	2
	16		16

SOPHOMORE YEAR.

First Semester:	*hrs.*
Voice	2
Piano	2
Harmony	2
Electives	1
Orchestration	2
Chorus and Orchestra Conducting	2
Special Methods	2
Management	2
	15

Second Semester:	*hrs.*
Voice	2
Piano	2
Counterpoint	2
Chorus and Orchestra Counducting	2
History of Education	3
Electives	2
Teaching	2
	15

On completion of the above course the student will be granted a special life certificate entitling him to teach in any public school, including all four-year high schools in Kansas.

RECITALS AND CONCERTS.

At frequent intervals during the school year public and private recitals and concerts are given in which all capable students are required to take part. These concerts are usually aided by the various student organizations, and are becoming very attractive features of the school year. Very frequently other concerts and entertainments by reputable artists are given in the Normal auditorium and the city, thus affording students an opportunity of hearing plenty of good music.

CLASSES AND ORGANIZATIONS FREE TO STUDENTS.

The Male Glee Club—rehearsals twice weekly.
The Polymnia Club (girls)—rehearsals twice weekly.
Orchestra—rehearsals once a week.
Band—rehearsals once a week.
Chorus practice—rehearsals as decided upon.
Public-school music, sight reading—recitations daily.

TUITION.

Term, nine weeks.

Piano, one hour lesson per week by Anthony Stankowitch	$22.50
Piano, one half-hour lesson per week by Anthony Stankowitch	13.50
Piano, one hour lesson per week by Margaret Leavitt	18.00
Piano, one half-hour lesson per week by Margaret Leavitt	9.00
Piano, one half-hour lesson, children 6 to 12 years, inclusive	4.50
Piano, two half-hour lessons, children 6 to 12 years, inclusive	9.00
Voice, one lesson per week (half hour)	9.00
Voice, two lessons per week (half hour)	18.00
Violin, one lesson per week (half hour)	9.00
Cornet and all brass and reed instruments, half-hour lessons, one per week	9.00
Harmony, class lessons	4.50
Harmony, private lessons	9.00
Piano rent, two hours daily for term, nine weeks	1.50

Those wishing to begin or to further improve their knowledge of the piano will recognize the unusual advantage in this department. Real finesse in execution and interpretation of the masters can be gained.

PIANO COURSE.

Special attention is given to laying a good foundation in the playing of each pupil. Every composition studied is analyzed, combining the theory and science of music with the technical development of the student. For the greater part of the piano curriculum the pieces are selected from the standard classical composers, although the modern school is not neglected.

The entire piano course is covered by five grades, namely:

1. ELEMENTARY. Studies and pieces selected from the first and second grades. Five pieces played from memory.

2. PRIMARY. Studies and pieces selected from the second and third grades. Eight pieces played from memory.

3. JUNIOR. Studies and pieces selected from the third and fourth grades. Ten pieces played from memory.

4. INTERMEDIATE. Studies and pieces selected from the fourth and fifth grades. Twelve pieces played from memory.

A certificate is given to students passing the intermediate grade, first-year history of music, and second-year harmony.

5. SENIOR. Studies and pieces selected from the fifth and sixth grades. Twelve pieces played from memory.

A diploma of graduation will be awarded to those who pass the senior grade, second-year history of music, and third-year harmony.

Throughout the entire piano course a definite system of technical training is carried out, using the metronome to test the student's proficiency.

Classification of a student is based on actual efficiency; not on amount of time devoted to any grade.

SECTION XI.

High School.

JUNIOR TRAINING HIGH SCHOOL.

(Seventh, Eighth and Ninth Grades.)

ADMISSION.

The number of students who may enroll in the Junior Training High School is limited for several reasons. The school is primarily a training school. The number of students admitted, therefore, must not be so large as to handicap the work of training teachers. Moreover, students having completed the sixth grade in the Normal Training School for the lower grades will be considered for admission first. Special students, and those who have not had, at high-school age, opportunity to attend high school, and who wish to enter the school for the first time in the ninth grade (third year of the Junior Training High School), will be accommodated as far as possible. But such students, if the major part of their work comes in the Junior Training High School, will be subject to the same requirements as to taking physical education, and as to attending chapel, as are required of other students in the same grade. Persons who have high-school advantages in their home towns are not encouraged to enter. As many students as can be accommodated, subject to the above provisions, will be admitted by presenting such credentials as will show that they have completed the work for the grade immediately preceding the grade into which they wish to enter.

GRADUATION.

For graduation from the Junior Training High School a student must have completed work totaling thirty credits, and in addition, must have done such work in physical education and music as may be required during the time and in the grades in which the student has been enrolled in the Junior Training High School.

A credit is a semester's work in one subject, consisting of a study-recitation period of one hour, five periods per week. For subjects in Science, Industrial Arts and Home Economics a credit includes such additional work (not to exceed five hours per week) as may be required for laboratory and shop work. The work of any pupil in physical education and in music will be graded according to regularity in attendance and interest shown.

SCHOOL ACTIVITIES.

Appropriate social activities and athletics in which as nearly as possible all pupils can take part, are encouraged. Student organizations for carrying on such activities successfully are especially encouraged.

OUTLINE OF COURSE.*

FIRST YEAR.

First Semester.	*Credits.*	Second Semester.	*Credits.*
Physical Education		Physical Education	
Music		Music	
English I	1	English II	1
Mathematics I	1	General Mathematics II	1
History I	1	History II	1
Industrial Arts I	1	Industrial Arts II	1
Home Economics I	1	Home Economics II	1
Geography I	⅗	Geography II	⅗
Penmanship	⅖	Penmanship	⅖

SECOND YEAR.

First Semester.	*Credits.*	Second Semester.	*Credits.*
Required:		*Required:*	
Physical Education		Physical Education	
Music		Music	
English III	1	English IV	1
General Mathematics III	1	General Mathematics IV	1
History III	1	Community Civics	1
Industrial Arts III	1	Industrial Arts IV	1
Home Economics III	1	Home Economics IV	1
Electives:		*Electives:*	
Industrial and Commercial Geography,	1	Industrial and Commercial Geography,	1
Foreign Language	1	Foreign Language	1
Penmanship	½	Penmanship	½
Drawing	½	Drawing	½

THIRD YEAR.

First Semester.	*Credits.*	Second Semester.	*Credits.*
Required:		*Required:*	
Physical Education		Physical Education	
English V	1	English VI	1
General Mathematics V	1	General Mathematics VI	1
General Science	1	General Science	1
Electives (Elect 2):		*Electives (Elect 2):*	
Industrial Arts	1	Industrial Arts	1
Home Economics	1	Home Economics	1
Ancient History	1	Mediæval History	1
Foreign Language	1	Foreign Language	1
Agriculture	1	Agriculture	1
Bookkeeping and Accounting	½	Bookkeeping and Accounting	½
Music	½	Music	½
Drawing	½	Drawing	½

SENIOR HIGH SCHOOL.

PURPOSE.

The Senior High School of the State Manual Training Normal School is maintained partly as a connecting link in the training of certain types of students, partly for the preparation of those who intend to teach upon the completion of a high-school course, and partly as a training school for students of Junior-Senior College grade, who are preparing to teach in the high schools of the state. The first of these classes comprise two groups: first, those who complete the course of our Junior Training High School. Second, those of more mature years who contemplate teaching, who have not had, at usual high-school age, opportunities for the completion of a high-school course. It is not the policy of the School to encourage students of usual high-school age to leave their local high school.

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* It is not claimed that this is a model course for a Junior High School. It is an attempt to meet not only the needs and conditions of a Junior High School, but those incident to a training school working under particular conditions. It must necessarily be changed as the nature and needs of a Junior High School become better known, as incident conditions change, and as it becomes evident that it fails in some respect to achieve that for which it was designed.

COURSE OF STUDY.

FIRST YEAR.

FIRST SEMESTER.

Required subjects:
- English III
- Mathematics III or Geometry I
- Biology I

Elective (one):
- History III
- Latin
- French
- Drawing
- Manual Training—Wood Turning
- Sewing—Domestic Arts III

SECOND SEMESTER.

Required subjects:
- English IV
- Mathematics IV or Geometry II
- Biology II

Elective (one):
- History IV
- Latin
- French
- Drawing
- Manual Training—Pattern Making
- Sewing—Domestic Arts IV

SECOND YEAR.

FIRST SEMESTER.

Required subjects:
- English V
- Physics I
- Physical Training

Electives (two):
- History V
- French
- Latin
- Agriculture
- Drawing
- Manual Training—Forging
- Cooking—Domestic Science I
- Arithmetic

SECOND SEMESTER.

Required subjects:
- English VI
- Physics II
- Physical Training

Electives (two):
- History VI
- French
- Latin
- Agriculture
- Drawing
- Manual Training—Foundry
- Cooking—Domestic Science II
- Algebra III

THIRD YEAR.

FIRST SEMESTER.

Required subjects:
- American History VII
- Physical Training

Electives (three):
- Chemistry
- Physiology
- Drawing
- Manual Training—Elem. Machine
- English VII
- Cooking—Domestic Science III
- Management and Methods
- French
- Latin

SECOND SEMESTER.

Required subjects:
- American History VIII
- Physical Training
- Civics IX

Electives (two):
- Chemistry
- Psychology
- Drawing
- Manual Training—Elem. Machine
- Cooking—Domestic Science IV
- Arithmetic
- French
- Latin

SUBJECTS BY GROUPS.

English, 3 units—required.

Mathematics, 2 units—required.

Algebra or General Mathematics, 1 unit.
Geometry or General Mathematics, 1 unit.

Science, 4½ units—2 units required.

Biology, 1 unit.
Physics, 1 unit.
Chemistry, 1 unit.
Physical Geography, 1 unit.
Physiology, ½ unit.
Agriculture, 1 unit.

History, 3½ units—1½ units required.

Ancient History, 1 unit.
Mediæval History, Modern History, 1 unit.
American History, 1 unit.
Civics, ½ unit.
English History, 1 unit.

Language, 6 units—none required.

Latin, 3 units.
French, 3 units.

ADMISSION.

Students may be admitted to the Senior High School in any of the following ways:

1. By completion of the Junior High School Course in this institution.
2. On credentials showing the completion of one year or more of acceptable work above the "eighth grade" in another school.
3. Students of maturity holding certificates of second grade will be admitted, without examination, to the second year Senior High School Course.
4. Students of maturity holding first-grade certificates will be admitted, without examination, to the third-year Senior High School Course.
5. Students not meeting any of the above requirements may be admitted, by examination, to such classes as their preparation warrants.

GRADUATION.

For graduation from the Senior High School, a student must have completed twelve units of work beyond the "ninth grade" or Junior High School. A "unit" is a year's work in one subject, reciting five times per week.

RUSSONIAN SOCIETY.

This society is one of the lively literary organizations of the institution. It is maintained wholly by and for the secondary students. It is not only an excellent place for literary training, but it looks well to the social life of its members.

RECEPTIONS.

During the year several social functions are held under the direction of special leaders, which are not only a source of great pleasure and delight, but the students learn the best of social etiquette. The object is to prepare the student to appear at ease in any society and to qualify him to take part in the social life of the community where he may go as a teacher.

PHYSICAL TRAINING.

Physical training for both boys and girls is under the direction of the Departments of Physical Education of the Normal School.

Every student in the Senior High School is required to take regular gymnasium class work unless excused by the school physician and the directors of Physical Education. The work includes regular gymnasium class work for girls—folk dancing, marching, games both indoor and on the playground. In addition special work is organized for the boys and the teams engage in spirited contests with neighboring schools.

SECOND- AND FIRST-GRADE CERTIFICATES.

Candidates for second-grade county certificates are required to have at least three units and for first-grade county certificates at least seven units of high-school credit. These credits may be selected from the following list:

Agriculture, 1 unit.
Algebra, 1 unit.
Ancient and Mediæval History, 1 unit.
Bookkeeping, 1 unit.
Botany, 1 unit.
Civics, ½ unit.
Commercial Geography, ½ unit.
Drawing, ½ unit.
English, 2 units.
Latin, 1 unit.
Modern History, 1 unit.
Music, ½ unit.
Physical Geography, ½ unit.
Physics, 1 unit.
Plane Geometry, 1 unit.

COLLEGE ENTRANCE.

Many of our students are looking forward to a course in some college, technical school, or university. Such students should acquaint themselves with the entrance requirement of the school or type of school which they hope to enter. The standardized entrance requirements for the colleges of Kansas are the following credits above the "eighth grade": English, 3; history, 2; algebra, 1; geometry, 1; biological science, 1; physical science, 1, and electives to complete a standard four-year course.

BIOLOGICAL SCIENCES.

NORMAL HIGH SCHOOL.

Courses 1 and 2. General Biology. These courses are designed to serve as an introduction to the elementary forms and forces of living nature. Here the student becomes acquainted with the common animals and plants that enter into the practical activities of the home and farm. Much of the work in the fall and spring is done out of doors. Required of first-year students in all groups. One-fourth, one-half or one unit.

Course 5. Elementary Physiology. This is a course in elementary physiology and hygiene designed especially for the elementary-school teacher. It deals mainly with the function of the organs of the human body and the hygienic conditions under which they do the best work. Attention is given to elementary-school hygiene. One-half unit credit.

COMMERCIAL COURSE.

A certificate is given for the completion of this course; also, two years' college work is given in Commerce, leading to a life diploma.

FIRST YEAR.

First Semester:		*Second Semester:*	
Booking	½	Bookkeeping and Accounting	½
Business Arithmetic	½	Business Arithmetic	½
Commercial Geography	½	Business Law	½
Penmanship	¼	Penmanship	¼
Elect	¼	Advanced Grammar	½

SECOND YEAR.

First Semester:		*Second Semester:*	
Shorthand	½	Dictation and Office Practice	½
Applied Business English	½	Commercial Correspondence	½
Spelling and Business Forms	½	Typewriting	½
Typewriting	½	Elect	¼

Bookkeeping. General law of debit and credit. Use of journal, cash book, purchase book, sales book, and making of all business statements. Handling of notes, drafts, and checks. Shipments and consignments. Some corporation work. Year subject. One unit credit.

Business Arithmetic. Solving actual business problems. Working time sheets. Practical measurements. Study of short methods. Year subject. One unit credit.

Penmanship. Developing of a plain, legible, rapid business hand. Year subject. Half unit.

Shorthand. Complete study of the manual. Text, Gregg. Twenty weeks. Half unit.

Dictation and Office Practice. Advanced shorthand. Taking of dictation from new matter. Working speed to 100 words per minute. Court testimony. Doing actual office work. Twenty weeks. Half unit.

APPLIED BUSINESS ENGLISH. Careful study of business phrases. Rules for punctuation, and drills in their application. Twenty weeks. Half unit.

COMMERCIAL CORRESPONDENCE. Study of letter forms. Writing all classes of business letters, with enclosures. Learn to do by doing. Careful study of postal regulations and different classes of mail matter. Twenty weeks. Half unit.

TYPEWRITING Writing of charts. Care and repair of machines. Drills for speed. Working of speed to forty words per minute. Year subject. One unit.

SPELLING AND BUSINESS FORMS. Study of roots, prefixes and suffixes. Spelling drills. Study of checks, notes, drafts, deeds, mortgages, and writing of same. Twenty weeks. Half unit.

DRAWING.

JUNIOR HIGH SCHOOL.

The drawing courses in the Junior High School are planned to meet the needs of the Departments of Industrial Arts and Household Economy. The drawing instructions are adapted to meet the needs of the pupil in his special work. Certain common fundamentals are emphasized throughout the course to give unity to the progress while acquiring technic and skill. The methods used will give special attention to securing definite results which will be of practical service, and not to doing abstract exercises in drawing. The work of boys will be fitted to meet the demands of the shop work, and that of the girls to acquire fundamentals of home decoration and costume design.

SENIOR HIGH SCHOOL.

The drawing courses in the Senior High School are to meet the needs of pupils who are preparing themselves for higher education or for definite professions in practical life. The acquirement of skill and technic will be emphasized, with development of taste and appreciation. The work of the boys will cover the field of practical mechanical drawing, developing into architectural and home planning, or into machine drawing. The work of the girls will be developed among lines leading toward a most thorough understanding of the principles underlying home decoration and costume design as well as in art application.

Course 1. FREE-HAND DRAWING FOR BOYS. A course for the development of technic and the elementary principles of working drawings, lettering and shop sketching.

Course 2. FREE-HAND DRAWING FOR GIRLS. Pictorial and decorative drawing in outline and in color. Still-life, groups and objects are used to develop an understanding of perspective history of art.

Course 3. DESIGN FOR BOYS. Principles of design, spacing and proportion applied to the construction of objects suitable for shop use.

Course 4. DESIGN FOR GIRLS Principles of design, lines of grace and beauty, spacing and proportions. Units, borders, conventionalization of natural forms adapted for use in the sewing department. Study of ornament.

Course 5. PENCIL, CHARCOAL, PEN AND INK AND COLOR OUTLINE, AND LIGHT AND SHADE DRAWING. Perspective principles with shades and shadows. History of Egyptian and Greek architecture.

Course 6. APPLIED DESIGN. Application of the principles of design to actual problems to be constructed in the shop or sewing department.

Course 7. ELEMENTARY MECHANICAL DRAWING. The student will attain proficiency in the use of instruments. A knowledge of orthographic projections, sections, developments, working drawings, etc., as applied to practical work, is given.

Course 8. ADVANCED MECHANICAL DRAWING. A continuation of course 7 in which standard drawing-room conventions are studied and applied in the drawing of machine parts. Lettering, tracing, and blue-printing.

Course 9. MACHINE DRAWING. This course is designed to round out the work in mechanical drawing as it relates to the mental trades. The use of conventions, standards and simple rules of empirical design are used in the designing of problems for construction in the shop.

Course 10. ARCHITECTURAL DRAWING. Study of the classic orders of architecture, architectural design, plans and elevations of a simple cottage. Reading and lectures. Arrangement of rooms for convenience. Houses under process of construction are observed, and the work of the classroom developed from notes and sketches.

EDUCATION.

ELEMENTARY PSYCHOLOGY I. This course is primarily for high-school students intending to teach. The student is introduced to the subject from a functional standpoint, emphasis being laid on what the mind does rather than what it is. One-half unit credit.

METHODS II. This course is intended for students completing the secondary course, who plan to teach before entering college. It anticipates the problems of method and management the beginning teacher meets in the rural and village school. One-half unit credit.

Observation of Teaching. The Training School will be open to prospective teachers for the purpose of observation. If conditions permit, one-half unit credit may be secured.

ENGLISH.

HIGH SCHOOL.

Course 1. GRAMMAR. A course in which English grammar is made practical and profitable—a reasoning, not a memory subject—and presented as the structural foundation of language. One-half unit credit.

Course 2. COMPOSITION. Both oral and written. A study of sentence structure, punctuation and spontaneity of expression. Correlated with and based upon current events. One-half unit credit.

Course 3. COMPOSITION AND RHETORIC. Description, narration, and themes. One-half unit credit.

Course 4. COMPOSITION AND RHETORIC. Exposition, argumentation, poetic forms. One-half unit credit.

Course 5. AMERICAN LITERATURE. A study of the different schools of writers and the representative authors of each, with representative classics. One-half unit credit.

Course 6. AMERICAN LITERATURE. This is a continuation of course 5, with a more intensive study of American classics, correlated with some phase of composition work, such as paragraphing or the making of logical outlines. One-half unit.

Course 7. MYTHOLOGY AND ENGLISH LITERATURE. Guerber's "Myths," correlated with Milton's "Minor Poems" and other illustrative classics.

FRENCH.

SENIOR HIGH SCHOOL.

Course 1. ELEMENTARY. First semester. Cerf and Giese's *Beginning French,* Lessons I to XXV. Lavisse's *Histoire de France* as a reader. Constant attention to pronunciation; conversation and other oral practice. One-half unit.

Course 2. ELEMENTARY (continued). Second semester. Above texts completed. Reading of one easy piece of fiction. Increased use of French in class. Memorizing of brief selections. One-half unit.

Course 3. INTERMEDIATE. First semester. Fraser and Squair's French Grammar for reference and composition. Review of elements; the important irregular verbs. About 150 pages of reading from Mérimée, Daudet, Halévy. Daily oral practice based on reading. One-half unit.

Course 4. INTERMEDIATE (continued). Fraser and Squair's Grammar; model auxiliaries and the subjunctive mode. Koren's *French Composition.* About 200 pages from standard writers, including a comedy. Translation reduced to the minimum. One-half unit.

LATIN.

JUNIOR HIGH SCHOOL.

VOCATIONAL LATIN (Second Year). First semester: Nouns, adjectives, prepositions, prefixes, suffixes. cases. Derivative notebooks and scrapbooks. D'Ooge's Latin for Beginners will be used for material. Second semester: verbs, pronouns. History of the Latin and Greek elements in English. Preparation of a Sabin exhibit. Especially recommended for pupils planning a course in commerce, science, literature, or the learned professions.

ELEMENTARY (Third Year). Latin I, first semester; Latin II, second semester.

SENIOR HIGH SCHOOL.

Course 1. ELEMENTARY. D'Ooge: Latin for Beginners, lessons 1 to 35, inclusive. Special attention to forms; daily Latin and English exercises; vocabulary drill; observation of English derivatives. One-half unit credit.

Course 2. ELEMENTARY (continued). D'Ooge completed. Daily drill on forms, vocabulary, idioms, derivations. Influence of Latin on English grammar and spelling. One-half unit credit.

Course 3. CÆSAR. Cæsar: De Bello Gallico, book 1 and selections for sight-reading. Baker and Inglis: Latin Prose Composition. Special attention to phrasing, idioms, and fluency of translation. Roman warfare and the Great War. One-half unit credit.

Course 4. CÆSAR (continued). De Bello Gallico, books 2, 3, 4. Baker and Inglis: Latin Prose Composition. Ancient Germany and Britain. One-half unit credit.

Course 5. CICERO I. Cicero's first, second and third orations against Cataline. Baker and Inglis' Composition, part II, begun. One-half unit credit.

Course 6. CICERO II. Fourth oration against Cataline, Archias, Manilian Law. Roman political institutions. Baker and Inglis' Composition, part II, completed. One-half unit credit.

GEOGRAPHY.

SENIOR HIGH SCHOOL.

Courses 1 and 2. PHYSICAL GEOGRAPHY. This course is designed to open the doors of science to the secondary pupil; to introduce topography, climate and soil as economic controls; to bring the student into harmony with his geographic environment. One unit credit.

Course 3. GEOGRAPHY REVIEW. This course is designed for high-school and college students who desire a general review of subject matter of political geography, together with methods of presentation. One-half unit credit.

Course 4. COMMERCIAL GEOGRAPHY. This course is designed to give the high-school student a knowledge of the geographic basis of commerce. It consists of text work, library reading, and the working out of geographic commercial problems. One-half unit credit.

HISTORY AND SOCIAL SCIENCES.

JUNIOR HIGH SCHOOL.

Course 1. ANCIENT HISTORY. This covers an introductory study of the ancient nations of Egypt, Babylonia, Chaldea, Assyria, Phœnicia, the Hebrews, India and China. The major part of the course is given to Greece and her institutions. Offered five hours per week, the first semester of the second year, Normal High School course, and is essential to History of Education. One-half unit credit.

Course 2. ANCIENT HISTORY. This course is given to the study of Rome through her rise and fall, and also the transitional period from 476 A D. to the death of Charlemagne, 814. Offered five hours per week, second semester, second year, Normal High School course. This is essential to History of Education. The work in courses 1 and 2 is done from outline. Special reference for library work, with map drawing, special papers, and special illustrated lectures by the teacher. Daily. One-half unit credit.

SENIOR HIGH SCHOOL.

Course 3. MEDIÆVAL HISTORY. This course covers the period from the death of Charlemagne to the close of the fifteenth century. In this course special attention is given to the rise of nations after the fall of Rome and the struggle for supremacy between the church and state. Offered first semester, third year, Normal High School course. Daily. One-half unit credit.

Course 4. MODERN HISTORY. This course takes up the Renaissance, Reformation, Revolution, social life of the times, rise and growth of constitutional governments, with the fall of absolutism. Offered the second semester of the third year, Normal High School course. Daily. One-half unit credit.

Course 5. ENGLISH HISTORY. A short course based upon Cheyney's text, to aid pupils in understanding the basis of many of our modern institutions which are otherwise not clear in the student's thinking. One-half unit credit.

Course 6. ELEMENTARY ECONOMICS. In this course attention is given to the fundamental principles of economics, with special work assigned to students suited to that course, such as rural economics, home economics, and social problems of city and farm. In our age of political, social and economic problems this course is indispensable, and lays well the foundation for further study in economics and society. Offered the second semester, fourth year. One-half unit credit.

Course 7. American History. This course covers the first half of American history beginning with 1492, and runs through the first semester of the senior year of Senior High School. It is a part of the history requirements for the one-year state certificate. One-half unit credit.

Course 8. American History. Is a continuation of course 7, covering the last half of American history, and is offered during the second semester of the senior year of Senior High School, making the complete American history requirements for the one-year state certificate. During the last six weeks of this semester special emphasis will be given to Kansas history. One-half unit credit.

Course 9. Civics. This course is to give the student a thorough understanding of the principles and practical workings of our government and prepare for intelligent citizenship. One-half unit credit.

HOME ECONOMICS.

The work of this department contains such subject matter and processes as are commensurate with the high-school girls' ability to perform. The unit of work for each year will be so organized as to include:

(*a*) Food in relation to its production, selection, cost, care, preparation and service.

(*b*) Clothing in relation to its cost and selection from the standpoint of hygiene and personal appearances; its care and repair; garment construction with as much of textile study as the problem in hand warrants.

(*c*) Shelter in relation to its cost, the choice of is furnishings, and care.

(*d*) The family—the relation of its members to each other and to the community; division of income; budgets; care of individual members.

INDUSTRIAL ARTS.

WOOD WORK.

Course 1. Bench Work. Includes a study of tools—as uses, names of parts, adjustments, their care, and how to sharpen; the making of a few important joints used in wood construction and their application in making useful projects; a study of materials, fastenings, etc.; notebook work, covering the talks, demonstrations, problems sketches. Five double periods per week for twenty weeks. One-half unit credit.

Course 3. Joinery. This course includes a study of tools, as uses, names of parts, adjustments, care of, and how to sharpen; the making of important joints and their application in the making of useful projects; a study of the different woods and materials used; demonstrations, and notebook work. Five double periods per week for twenty weeks. One-half unit credit.

Course 5. Wood Turning. Includes the care and use of turning tools, care and adjustments of lathe, turning between centers, chuck, faceplate and screw-center work, polishing in the lathe. Exercise work, followed by applications in some useful project. Five double periods per week for twenty weeks. One-half unit credit.

Course 7. Pattern Making and Molding. Includes instruction in the use and care of tools and machinery; instruction in allowances for drafts, shrinkage, finish, shake and warp; a study of all the interests involved in the foundry of each pattern; and the making of patterns involving the fundamental principles of the trade. Five double periods per week for twenty weeks. One-half unit credit.

Course 9. CABINETMAKING. Includes the use of general woodworking tools and machines; designing and construction of furniture and cases for home and school use; a study of woods; and a carefully prepared notebook on the work done, covering fastening devices, materials, demonstrations, etc. Five double periods per week for twenty weeks. One-half unit credit.

Course 11. BUILDING CONSTRUCTION. Designed to teach the fundamentals of building construction applied to the making of useful projects about the home. The work is largely individual, and encouragement is given to secure the greatest possible variety of projects. Five double periods per week for twenty weeks. One-half unit credit.

METAL WORK.

Course 2. FOUNDRY A course in which the simpler problems of foundry practice are studied, including green dry sand and cored work, the use of the brass furnace and cupalo. Five double periods for twenty weeks. One-half unit credit.

Course 4. FORGING. A course in which the theoretical as well as the practical side of forging is studied in connection with the simpler farm and industrial problems. Five double periods for twenty weeks. One-half unit credit.

Course 6. MACHINE-SHOP PRACTICE. Elementary work in chipping, filing, fitting, and practical experience in operating the more common machine tools. Five double periods for twenty weeks. One-half unit credit.

Course 7. MACHINE SHOP. A continuation of course 6.

MATHEMATICS.

JUNIOR HIGH SCHOOL.

Courses 1 and 2. GENERAL MATHEMATICS I AND II. The first part of the course includes arithmetic of the home, the store, the farm, industry, and the bank. Part II introduces the simpler elements of geometry, including geometry of form, size and position. First year of the Junior Training High School. Two credits.

Courses 3 and 4. GENERAL MATHEMATICS III AND IV. This year's work introduces the formula, the graph, positive and negative numbers, and the applications of algebra to arithmetic. The latter part of the course is a continuation of the work outlined in General Mathematics I and II. Second year of the Junior Training High School. Two credits.

Course 5. GENERAL MATHEMATICS V. An introductory course in the simpler principles of both algebra and geometry, together with those topics in arithmetic which should be worked by the methods and concepts of algebra and geometry. First semester, third year of the Junior Training High School. One credit.

Course 6. GENERAL MATHEMATICS VI. A continuation and completion of the topics outlined in General Mathematics V. Second semester, third year of the Junior Training High School. One credit.

SENIOR HIGH SCHOOL.

Course 7. GENERAL MATHEMATICS VII. A continuation of the unified mathematics outlined in courses 1 and 2, including all the algebra and geometry usually given in the first two years' work of the standard four-year high school. First semester, first year of the Senior High School. One-half unit credit.

Course 8. GENERAL MATHEMATICS VIII. A completion of the topics of course 7, and an elementary treatment of logarithms. Many applied problems are given in this course. Second semester, first year of the Senior High School. One-half unit credit.

Course 9. ARITHMETIC. A rapid review of the essential topics of practical value, with emphasis on the short methods in common use. Considerable stress is placed upon the degree of accuracy required in the problems assigned, and only such problems are considered as have close similarity with those met in the commercial or industrial occupations. This course is designed for the special benefit of the rural and grade teachers. First semester, second year. Prerequisite, two years of high-school mathematics. One-half unit credit.

Course 10. ALGEBRA III. This course completes the work in algebra usually given in high schools. It includes a review of linear and quadratic equations, radicals, involution, evolution, progressions, logarithms and imaginaries. Second semester. Prerequisites, courses 1 to 8, or their equivalent. One-half unit credit.

Course 11. SOLID GEOMETRY. Elements of solid geometry; properties and measurements of surfaces and solids. Prerequisite, Plane Geometry, or courses 1 to 8. One-half unit credit.

Course 12. INDUSTRIAL MATHEMATICS I. A course in elementary mechanics as applied to agricultural and shop machinery. Carpentry and building; sheet-metal work; bolts, screws and rivets; shafts, pulleys and gears; plumbing and hydraulics; steam engines; mathematics for machinists. First semester. Prerequisite, courses 1 to 6. One-half unit credit.

Course 13. INDUSTRIAL MATHEMATICS II. A continuation of course 12. Second semester. Prerequisite, course 12. One-half unit credit.

Course 14. VOCATIONAL MATHEMATICS I. This course is designed especially for girls, and deals with the computations found in all the principal vocations that women are likely to enter. Food computations; house construction and furnishing; dressmaking and millinery; arithmetic for office assistants, salesgirls, cashiers, and nurses; and a thorough drill in the metric and English systems of weights and measures. Prerequisite, courses 1 to 6. First semester. One-half unit credit.

Course 15. VOCATIONAL MATHEMATICS II. A completion of the topics outlined in course 14. Second semester. One-half unit credit.

METHODOLOGY.

Course 1. METHODS FOR SENIORS IN HIGH SCHOOL. The high-school course provides for a half unit in methods and management, and in meeting this requirement in the professional course a class in methods is maintained the last semester for those who are planning to teach directly following their graduation from high school. This course includes methods in the various studies taught in the elementary schools. Special consideration is given to difficult portions found in the state texts in the common branches. One-half unit credit.

PHYSICAL SCIENCES.

INDUSTRIAL PHYSICS.

Course 1. MECHANICS AND HEAT. An elementary course, consisting of classroom demonstrations, recitations, laboratory work and field trips to develop and apply the principles of mechanics and heat. Emphasis is placed largely upon the industrial applications of these principles to familiar machines and instruments, such as steam and gas engines, pumps, hydraulic presses, pressure gauges, water and gas meters, speed indicators, pulleys, blocks and tackles, and chain hoists. First semester.

Three class periods and two double laboratory periods per week. One-half unit credit.

Course 2. ELECTRICITY, MAGNETISM, SOUND AND LIGHT. An elementary course of demonstrations, recitations and laboratory work in practical electricity, sound and light. The boys study the construction and operation of such electrical devices and machines as dynamos, motors, transformers, arc lights, meters, electric irons, toasters, stereopticon machines, telephones, telegraph, wireless systems. Second semester. Three class periods and two double laboratory periods per week. One-half unit credit.

HOUSEHOLD PHYSICS.

Course 1. HEAT AND MECHANICS. An elementary course in the principles of heat and home mechanics, consisting of recitations, demonstrations and laboratory work. Problems studied are heating of homes, efficient use of fuels, proper methods of ventilation, moisture in air, gas and water meters, sewing machines, vacuum cleaners, sanitary plumbing, water supply, etc. Three class periods and two double laboratory periods per week. One-half unit credit.

Course 2. LIGHT, SOUND AND ELECTRICITY. Continuation of course 1. Some of the subjects studied are principles of good lighting, measurement of light values, musical instruments, principles of harmony, electric door bells, electric meters; operation and cost of operating electric irons, lights, toasters and fans, etc. Three class periods and two double laboratory periods per week. One-half unit credit.

INDUSTRIAL CHEMISTRY.

Course 1. This course consists of the study of such subjects as air, water, fuel, and cleaning agents, together with the easier tests for the classes of plant and animal foods. Emphasis is placed upon a clear understanding of the chemistry of the home and farm, as this course is designed for students of the domestic art, science and agriculture courses. Laboratory fee for material used. One-half unit credit.

Course 2. INDUSTRIAL CHEMISTRY. A continuation of course 1. One-half unit credit.

Course 3. GENERAL SCIENCE. This course, as the name implies, includes the easy parts of the physical sciences. The course aims to acquaint the student with his physical environment, also a basis for more extensive work in any of the physical sciences. One-half unit credit.

PHYSICAL EDUCATION.

JUNIOR AND SENIOR HIGH-SCHOOL BOYS.

The courses in physical education are required in all the years of both the Junior and Senior High Schools. Students who report regularly for the athletic teams will be given credit on their required work.

Courses 1 and 2. JUNIOR HIGH SCHOOL. First and second semester. Two hours weekly. This course will, whenever the weather permits, be conducted outdoors and during the winter months in the college gymnasium. Many outdoor playground games will be used and the indoor work will consist of free exercises, graded apparatus work and gymnastic games.

Courses 3 and 4. SENIOR HIGH SCHOOL. First and second semester. Three hours weekly. This course is a continuation of the Junior High School courses 1 and 2, and the students will be advanced as proficiency in the graded course is shown. Senior High School students have equal consideration with the college students in the use of the gymnasium and athletic field.

SECTION XII.

Degrees Conferred, Certificates Granted, and Roll of Students, from June 1, 1920, to February 1, 1921.

STUDENT ROLL.

POST GRADUATES.

Alberty, Iva Adele; Pittsburg.
Ashton, Bessie Leola; *Urbana, Ill.*
Ayers, Nelle Wren; *Oelwein, Iowa.*
Bashaw, Theodore George; Emporia.
Brandenburg, Amy; Pittsburg.
Briggs, Phillip Orville; Pittsburg.
Broadlick, Robert C.; Pittsburg.
Broyles, Magretta Lee; Pittsburg.
Craig, Keren Newcomb; *Tulsa, Okla.*
Davidson, Ross Wallace; West Mineral.
Dole, Ethel M.; *Manteno, Ill.*
Elliott, Washburn Harrison; Arcadia.
Elliott, William Hugh; Sedgwick.
Fleeson, Elizabeth Helen; Sterling.
Guthridge, L. A.; Pittsburg.
Hall, Harry H.; Pittsburg.
Jordan, Mrs. Louise Bulger; *Fostoria, Ohio.*
Kelley, Anna; Pittsburg.
Lehmann, Anna Adolpha; Saffordville.
McCue, Ernest Francis; Westphalia.
Macklin, Sarah Luella; Walnut.
Mortimer, May; Cherryvale.
Nickell, William Anderson; *Joplin, Mo.*
Parham, Maude C. Peak; *Council Bluffs, Iowa.*
Ringle, Mrs. Lillian Newton; Pittsburg.
Sheads, Anna Margaret; Fort Scott.
Smith, Elsie Miriam; Coffeyville.
Smith, Ruby M.; Girard.
Steele, Andrew B.; Liberal.
Summers, Ruth Prudence; Pittsburg.
Van Dyke, Mrs. Bessie A.; Pittsburg.
Vawter, James Penhale; *Joplin, Mo.*
Watson, Lillie; *Denver, Colo.*
Williams, Grace McBee; Winfield.

SENIORS.

Allen, Lora Alice; Pittsburg.
Allender, Agnes Martha; *Burlington, Iowa.*
Baker, Barney McKinley; *Picher, Okla.*
Baronner, Sylvester J.; Elk City.
Benefiel, James H.; Coffeyville.
Bowers, Copeland Connelly; Pittsburg.
Bowlus, Harry John; Mulberry.
Brakey, Maude M.; Neodesha.
Brandenburg, Merrill Francis; Pittsburg.
Brown, Nina Elizabeth; Pittsburg.
Bruno, Fannie Mae; West Mineral.
Bruno, Mary Helen; West Mineral.
Bryan, Sister Mary Bernadette; Paola.
Bushnell, Hilda Corinne; Mound Valley.
Buvinger, Blanche Ailene; Chetopa.
Carl, Mabel Elzena; Arma.
Carter, Cecile Wanda; Pittsburg.
Clarke, Roe E.; Rosedale.
Cooper, Mrs. Elizabeth Jaccard, *Joplin, Mo.*
Corbet, Clarence Martin; Highland.
Corlett, Eva; *Joplin, Mo.*
Crow, Agnes; Pittsburg.
Cunningham, Eva S.; Strong City.
Davis, Racheal Lizabeth; Pittsburg.
Davis, Thomas Ezra; Bartlett.
Dowell, Gideon; *Tecumseh, Okla.*
Dowell, Horace Frederick; *Cameron, Okla.*
Dowell, Lottie Hunter; *Calumet, Okla.*
Downing, Ethel; Galena.
Durboraw, Ida Estella; *Kansas City, Mo.*
Edwards, Eliza Frances; Pittsburg.
Elliott, Edna Pearl; Pittsburg.
Engelhardt, Pearl; Winfield.
Evans, Della M.; McCune.
Ferguson, Kate; Parsons.
Ferpotto, John A.; Frontenac.
Fesmire, John Russell; *Grant City, Ill.*
Fikani, John G.; Altoona.
Fisher, Iva Fern; Harper.
Flottman, Edward Albert; Chanute.
Forsyth, Joseph Bryn; Chetopa.
Fulkerson, Eula Lorene; Pittsburg.
Fulkerson, Freddie Lydia; *Pryor, Okla.*
Gale, Mae L.; Mulberry.
Gardner, Norma Leona; Elsmore.
Garrison, John B.; Pittsburg.
Gibson, Mrs. Olive Nelson; *Webb City, Mo.*
Gilbert, Alva Richard; Pittsburg.
Glaser, Helen H.; Mulberry.
Goffe, Raye Eleanor; Pittsburg.
Gold, Ernest James; *Cleghorn, Iowa.*
Gould, Mary Ellen; *Chillicothe, Mo.*
Graves, Coke Bernard; Pittsburg.
Green, Finis M.; Pittsburg.
Hackney, Effie Belle; Hallowell.
Harris, Louvina Dockery; Galena.
Hawkins, Ernest Jocquito; Fort Scott.
Hewitt, Hazel Bell; Chetopa.
Heyburn, Pearl Agnes; *Monett, Mo.*
Hill, Carey Lewis; Ottawa.
Hobbs, Alph Herrick; McCune.
Holman, Flo E.; Mulberry.
Hopper, Bess; Lansing.
Householder, Hattie C.; *Pineville, Mo.*
Householder, Stanford Linden; *Pineville, Mo.*
Huff, Mary Pearl; Galena.
Huston, Vera Lorena; Pittsburg.
Iserman, Grace Hazel; Pittsburg.
Jefferson, Jennie; Independence.
Johnson, Clarence Edward; Pittsburg.
Johnsten, Paul Brewster; Peabody.
Jones, Iona Elvira; Pittsburg.
Jones, Willie Belle; Parsons.
Jury, Lucy; LaHarpe.
Kennedy, Elizabeth Elzina; Opolis.
Kiefer, Julius E.; Osawatomie.
Koontz, Mrs. J. H.; Parsons.
Lake, Carl Henry; Emporia.
Leamon, A. Dale, Westphalia.
Leblicq, Carmen V.; Pittsburg.
Litton, Glenn B.; *Hardin, Mont.*
Locke, Ova Lee; *Joplin, Mo.*
Lowry, Ella; *Joplin, Mo.*
McCormick, Ivy Pearl; Winfield.
McCue, Zella; Pittsburg.
McDonald, Cora; *Joplin, Mo.*
McDonald, Edna Rhedyth; *Dallis, Tex.*
McFarland, Muriel Graham; Coffeyville.
McGonigle, Zoe; Pittsburg.
McGregor, Jennette Alethea; Columbus.
McLean, Margaret; Fort Scott.
Malleis, Edward Herman; Halstead.

SENIORS—*Concluded.*

Mathes, Lloyd Merrill; Pittsburg.
Matter, William Everett; Weir.
Matthews, Jesse Walton; Pittsburg.
Matthews, Mrs. Lutie Belle; Pittsburg.
Matthews, William H.; Pittsburg.
Mertz, Sister Mary Ursula; Bucyrus.
Meyer, Amelia Pauline; Girard.
Michie, Orbie E.; McCune.
Miller, Lena Marie; Chanute.
Mitchell, Margaret Olive; Pittsburg.
Montgomery, Clayton Lawrence; Kansas City.
Moody, Florence; Columbus.
Moore, Sadie Elanora; Baxter Springs.
Nevius, Theodora Florence; Edna.
Nichols, Mary Edna; Pittsburg.
Nicholson, Ella Pearle; McCune.
Oertle, Anna L.; *Indianapolis, Ind.*
Parr, Augustus Stanley; Rossville.
Pease, William Ross; *Detroit, Mich.*
Pierce, Ethelyn Winifred; Fort Scott.
Piper, Beryl Hammers; Scammon.
Pittenger, Leah Leone; La Crosse.
Porter, Mrs. Caroline; Parsons.
Potter, Emma Grace; Girard.
Potter, Jane M.; Weir.
Price, Grace Evans; Coffeyville.
Pritchard, Laura Ida; Wichita.
Quackenbush, Jessie; Pittsburg.
Reeves, Gula Marie; Pittsburg.
Reichert, Mother Thomas; Paola.
Rodenberg, Lydia Minnie; Halstead.
Rodgers, Alza; *Gentry, Ark.*
Rude, Hallie F.; Hutchinson.
Russell, Mary Frances; Stafford.
Rust, Mrs. Lucile Osborn; Altamont.
Schauer, Elizabeth; *Tulsa, Okla.*
Scott, Floyd LeRoy; Greenleaf.
Scott, Wilma; *Galesburg, Ill.*
Sergeant, Martha Gertrude; *Joplin, Mo.*
Sheffield, John Patterson; Arcadia.
Shockey, Beulah Fern; Iola.
Shumard, Velma Dean; Colony.
Smither, Reba E.; Pittsburg.
Spencer, Bertha A.; *Carthage, Mo.*
Staib, James R.; Longton.
Stevens, Mary D.; Fort Scott.
Stoffer, Frank Myron; *Kirksville, Mo.*
Stonecipher, Ernest Everett; La Cygne.
Streng, Edna Edith; Chetopa.
Sutherland, Launce L.; *Henryetta, Okla.*
Taylor, Leona Irene; Dearing.
Taylor, Roy Ernest; Ottawa.
Tomlinson, J. R.; Independence.
Towell, John Foster; Scott City.
Trinder, Martha; *Maryville, Mo.*
Vietti, Frank; *Orange, Tex.*
Waltz, G. Madge; Pittsburg.
Watson, George Ezra; Fort Scott.
West, J. A. T.; *Tulsa, Okla.*
White, Florence; Weir.
Wiedenmann, John Charles; Hepler.
Wilkins, John G.; Cherokee.
Williams, Roy Ernest; *Lewiston, Idaho.*
Winner, Clyde Curtis; Winfield.
Wood, Anna Louise; Great Bend.
Yates, Robert; Pittsburg.
Young, Grace Ellen; Galena.
Young, William Rankin; Walnut.

JUNIORS.

Akers, Bernice May; Chanute.
Alexander, Gladys Nellie; Pittsburg.
Allen, Rose; Fort Scott.
Allison, Avis Maude; Pittsburg.
Allison, Naoma; Chanute.
Anderson, Logan M.; Columbus.
Austin, Leola May; Mulberry.
Bailey, Jessie Marie; Pittsburg.
Baker, Mrs. Barney McKinley; *Picher, Okla.*
Baker, Gertrude V.; Coffeyville.
Barber, Gertrude Louise; Coffeyville.
Barr, Edna; Cherokee.
Bauer, Erma Marie; *Joplin, Mo.*
Baxter, Lulu; Pittsburg.
Benn, Fannie A.; Pittsburg.
Bennett, Oscar Nelson; Oswego.
Bentley, Margaret Stiles; Coffeyville.
Betts, Maybelle; Columbus.
Board, Dollie; *Joplin, Mo.*
Borden, Hattie; Girard.
Bowen, Dorothy M.; Pittsburg.
Bradbury, Consuelo; Edna.
Bradfield, Romola Clark; Pittsburg.
Bradshaw, Ralph Orville; Chanute.
Bridger, Eulalie A.; Hutchinson.
Bucher, Martha; Kansas City.
Buller, Jacob Saunders; Coldwater
Burgess, Edwin Thomas; Paola
Burnett, Cullen Ingomar; La Cygne
Burns, Minnie; Independence.
Buterbaugh, Ruth; *Carthage, Mo.*
Caffey, Marguerite Winn; Pittsburg.
Callista, Sister M.; Fort Scott.
Canty, Virginia; Buffalo.
Carmody, Theresa Marie; Bonner Springs.
Carnagey, Charlsie Marie; La Cygne.
Carney, Dora; *Joplin, Mo.*
Carney, Winnie; *Joplin, Mo.*
Cash, Dora; Independence.
Cassedy, Edith Elizabeth; *Rochester, Minn.*
Clarahan, Sister M. Ambrose; Ellinwood.
Clark, Lacy Naomi; Parsons.
Clark, Oma Dell; Pittsburg.
Claxton, Clarence Claten; Oswego.
Cline, John M.; McPherson.
Cloyd, Mary Edith; Pittsburg.
Cochran, Riley M.; *Bethany, Mo.*
Conrad, Anna Marie; Pittsburg.
Costello, Anna D.; Pittsburg.
Costigan, Catherine Julia; Ottawa.
Coverston, Helen Louise; Pittsburg.
Crook, Rosella Elizabeth; Independence.
Daniel, Adah Maude; Neodesha.
Daniel, Helen Eloise; *Catlettsburg, Ky.*
Davis, Harry; Galena.
Davis, Irma S.; *Picher, Okla.*
Davison, Le Roy; Fort Scott.
Dienst, Barbara Wilhelmina; Coffeyville.
Doty, Charlotte; Pittsburg.
Doty, Jack; Pittsburg.
Doughman, Mrs. Mellie Crabtree; Mound Valley.
Doverspike, Mary Clara; Alta Vista.
Drake, Greta; Pittsburg.
Duffey, Dene; *Kansas City, Mo.*
Duvall, Nellie S.; West Mineral.
Edwards, Nellie J.; Walnut.
Elam, Alice Winifred; Parsons.
Ellis, Vernon Clinton; *St. Anthony, Idaho.*
Emery, Mrs. Ruby Nance; Pittsburg.
Esch, Eugenia Rosalie; Pittsburg.
Esch, Marie Anna; Pittsburg.
Estes, Floyd E.; Paola.
Ettinger, Maude Edna; Girard.
Farrimond, Mildred; Pittsburg.
Faulkner, Vera; *Webb City, Mo.*
Fenn, Lois Ellen; Coffeyville.
Finley, Ruth L.; Fort Scott.
Fintel, Anna C.; Pittsburg.
Flagg, Ethelyn Lavera; Pittsburg.

JUNIORS—*Continued.*

Flaglie, Lena L.; *Joplin, Mo.*
Foster, Lena Reah; *Joplin, Mo.*
Frank, Regina Kathryn; *Bellingham, Wash.*
Franklin, Alpha Vivian; Winfield.
Fulkerson, Lysle B.; Pittsburg.
Gibson, Roland Medley; *Webb City, Mo.*
Gilbert, Elsworth Gland; Pittsburg.
Godsey, Viola Louise; *Collinsville, Okla.*
Goodhall, Charles Albert; *Winslow, Ariz.*
Grandle, Nina Catherine; Pittsburg.
Greef, Dorothy Etta; Pittsburg.
Greene, Adelaide G.; *Joplin, Mo.*
Guffey, Logan Cicero; Pittsburg.
Gunsaullus, Marie; Fort Scott.
Hall, Rosa Manila; Pittsburg.
Hall, Stella Myrtle; *Newkirk, Okla.*
Hall, Velma Frances; *Newkirk, Okla.*
Halliday, Margaret; Pittsburg.
Hatton, Ferda Hazel; Pittsburg.
Hauser, Winifred; Wichita.
Haxton, Mrs. Gertrude Leeth; Lyons.
Heath, Viola May; Pittsburg.
Helmer, S. Velma; Fort Scott.
Helton, Georgia Archer; Galena.
Hendrex, Louise; *Neosho, Mo.*
Henneberry, Katheryne Virginia; Arkansas City.
Henry, Inez M.; Coffeyville.
Henry, Stella Fay; Independence.
Hensley, Zilpha; Girard.
Hiett, Bessie Dalaurice; Arma.
Higgins, Ella Gainer; Pittsburg.
Hughes, Horace Sumner; *Tulsa, Okla.*
Hull, Mrs. Mable Grace; Thayer.
Huston, Margaret R.; *Kansas City, Mo.*
Hutcheson, Hallie Mae; Pittsburg.
Ingham, Anna Blanche; Fort Scott.
John William Ellis; *Joplin, Mo.*
Johnson, Daisy; *Monett, Mo.*
Johnson, Mrs. Golden Lee; Pittsburg.
Johnson, Samuel Bennett; Oketo.
Kautz, Beryl; Girard.
Keesling, Charles Ellsworth; Fredonia.
Kelley, Prudie; Pittsburg.
Kelley, Verna Irene; Pittsburg.
Kelly, Isabelle Mary; Pittsburg.
Kelsey, Sara Sophia; Baxter.
King, Mary Agnes; Pittsburg.
Kirkpatrick, Mrs. Harriet Ellen Cloyd; *Morrisonville, Ill.*
Knowlton, Ethel May; Randall.
Koontz, Ophelia Frances; *Richards, Mo.*
Larrick, Flora La Vauche; Leon.
Laughlin, Ruth Mae; Pittsburg.
Lease, Daisie Viola; Redfield.
Lee, Percy H.; *Kansas City, Mo.*
Lee, Ruth Mary; McCune.
Lemon, Grace Crawford; Pittsburg.
Lewis, L. Ruth; Pittsburg.
Leyburn, Ruby Louise; Weir.
Lickteig, Sister M. Evangelista; Paola.
Ligon, Ethel B.; Niotaze.
Limb, John R.; Girard.
Lowe, Lavon Mary; Pittsburg.
McCall, La Vern Filson; Pittsburg.
McCarty, Bertha Barnes; Parker.
McCully, Maude; Coffeyville.
McDyson, Esther Stiles; *Atlanta, Ga.*
McEntee, Agnes R.; *Carterville, Mo.*
McFarland, Sister M. Colombiere; St. Paul.
McFerron, Mary Grace; Independence.
McKee, Myrtle Ann; Girard.
Marker, Donald Isaac; Ozawkie.
Matthews, Robley D. Evans; Pittsburg.
Mendenhall, Robert Miller; Pittsburg.
Merritt, Sadie; McCune.
Mertz, Edna Pauline; Potwin.
Michel, Elsie Lillian; Walnut.
Michels, Louise J.; *Henryetta, Okla.*
Miller, Bryan R.; Halstead.
Miller, Donald Waldo; Halstead.
Miller, Margaret; *Bolivar, Mo.*
Miller, Treva Margaret; Independence.
Miller, William Beach; Holton.
Moore, Herbert Wayne; *Eureka Springs, Ark.*
Moss, Louise Anderson; Pittsburg.
Myers, Anna L.; Weir.
Nation, William Roy; Shaw.
Nevius, Katie Belle; Edna.
Nipple, Florence Marie; Mulberry.
O'Connor, Irene Edith; Fort Scott.
Ogden, Helen Laird; Coffeyville.
Oles, Grace M.; Girard.
Oliver, Hazel May; Pittsburg.
Olson, Ella Genevieve; Savonburg.
Owen, Lorna Doone; *Clinton, Mo.*
Phillips Alice Lucile; *Joplin, Mo.*
Philips, Jane Lucinda; Mulberry.
Pickerill, Orville Alfred; *Pepeekeo, Hawaii.*
Pomphrey, Lloyd Walter; Lawrence.
Popkins, Charles Wesley; Halstead.
Porter, Olivia; Oswego.
Proctor, Jesse S.; Atchison.
Puckett, Mildred Marguerite; Galena.
Reese, Mattie Lou; Pittsburg.
Reeves, B. Pearl; Grenola.
Rencenberger, Charles; Pittsburg.
Riley, Gladys Louise; Pittsburg.
Robins, Lina L.; Parsons.
Ross, Mollye Bernice; Parsons.
Russell, Richard; Mineral.
Saccanne, Guido Herbert; Ringo.
Sanders, George Alfred; Columbus.
Sandford, Martha; Pittsburg.
Sandford, Telia; *Joplin, Mo.*
Schnebly, George; Pittsburg.
Schwab, Hester Ellen; Pittsburg.
Seymour, Harold; Pittsburg.
Seymour, Kathleen; Kansas City.
Sheehan, Sister Margaret Mary; Dodge City.
Shirley, Sophia Mary; Osage City.
Shukers, Burton Twiss; Independence.
Simmons, Nell; *Carthage, Mo.*
Sloan, Don Alvin; Winfield.
Smith, Blanche; Pittsburg.
Smith, Mary Ethelma; Pittsburg.
Smith, Pauline Winn; Coffeyville.
Smith, Sister M. Berchmans; Hutchinson.
Smock, Leeanna Jewell; Galena.
Sneller, William Arthur; Kingman.
Snyder, Mabel Ruth; La Cygne.
Spence, Mabel Leota; Arkansas City.
Stevens, Mrs. Tempa; Ford.
Stonecipher, Joseph Edgar; Scammon.
Stough, Winona Davies; Cherokee.
Strosnider, Etta; Pittsburg.
Sturgeon, Hays B.; Eureka.
Sullivan, Frances M.; Pittsburg.
Sweeney, Isadore Mae; Pittsburg.
Taber, Mary Iris; *Holdenville, Okla.*
Taylor, Ruby E.; Fort Scott.
Thompson, Lenore June; Pittsburg.
Throndson, Keith; Farlington.
Townsend, Sue; Girard.
Tyler, May Elizabeth; *Joplin Mo.*
Underhill, Nettie B.; Independence.
Vining, George; Dearing.
Wade, Isabel; *Joplin, Mo.*
Wakefield, Nellie G.; *Carthage, Mo.*
Walker, Bertha Beatrix; Pittsburg.
Walker, William Olin; *Morristown, Tenn.*
Ward, Lora Isabelle; Geuda Springs.

JUNIORS—*Concluded.*

Webber, Damon A.; Fort Scott.
Wederbrook, Sue; Leavenworth.
Weems, Mary; *Sherman, Tex.*
Wells, George; Minneapolis.
White, Willie A.; Coffeyville.
Whiteside, Goldie May; Byers.
Whitney, Wilbert Carroll; Topeka.
Williams, Billie Wilma; Pittsburg.
Williams, Ceshel C.; *Miami, Fla.*
Williams, Winferd M.; Winfield.
Wilson, Ruth; Pittsburg.
Wimp, Marguerite; Pittsburg.
Wohlford, Olive May; Harper.
Wright, Faye Gladys; Weir.
Wright, Ruby Marie; Weir.
Wright, Ruth Lenore; Pittsburg.
York, Richard A.; Fort Scott.

SOPHOMORES.

Abbey, Thelma Irene; Pleasanton.
Adamson, Gladys Marie; *Hedgesville, Mont.*
Aikman, Leonard Barney; Pittsburg.
Alexander, Gertrude M.; Pittsburg.
Alexander, LaVon B.; Pittsburg.
Alyea, Harold Benjamin; Atchison.
Anderson, Helen Rose; Thayer.
Archer, Viola Hazel; Galena.
Armstrong, Barbara Laura; Pittsburg.
Arnodo, Esther Amelia; Pittsburg.
Aton, Rex; *College View, Neb.*
Austin, Goldie Mamie; Arcadia.
Bachtel, Bertha O.; Latham.
Badger, Ozro Bruce; Wichita.
Baker, Gloria Gould; Pittsburg.
Baker, Myrtle Maye; Pittsburg.
Baldridge, Marie; Weir.
Barber, Caroline; Coffeyville.
Barnes, Blanche E.; Mound Valley.
Barnes, Sadie Isabel; Baxter Springs.
Barr, Sadie; Cherokee.
Barrick, Grace Mae; Bartlett.
Bechdoldt, Frances Lily; *Asbury, Mo.*
Beck, William Leslie; Osawatomie.
Beltram, Johnnie; Carona.
Bennett, Grace Margaret; Scammon.
Blackman, Belle; *Liberal, Mo.*
Blaes, Sister M. Florence; Wichita.
Bollinger, Marie; Mound Valley.
Bonsal, Mary Ruth; *Joplin, Mo.*
Boone, Daniel Noel; Colony.
Boore, Mamie; McCune.
Borden, Lula Agnes; Girard.
Boyce, Mabel Benita; Galena.
Bradford, Odessia LaFern; *Webb City, Mo.*
Brannum, Nellie Inez; Atlanta.
Brisbin, Leona; Scammon.
Broadus, Leola Sohnne; Parsons.
Brooks, Betty Barton; Pittsburg.
Brown, Anna Jane; Fort Scott.
Brunk, Florence Helena; Dodge City.
Bruton, Lottie Marie; Pittsburg.
Bryant, Homer Lafayette; Galena.
Bryce, Jessie Jones; Topeka.
Bryden, Nellie; Fort Scott.
Bucher, Laura; *Joplin, Mo.*
Buford, Lucretia Rosebelle; Fort Scott.
Burkett, Alta Frances; Cedar Vale.
Butler, Faye; *Golden City, Mo.*
Butler, Mrs. Frankie Louisa; Coffeyville.
Cann, Winifred; Pittsburg.
Capps, Daphna J.; Arcadia.
Carlton, Ann Helen; Pittsburg.
Carnagey, Thelma Josephine; La Cygne.
Carr, Nora Ann; Parsons.
Carroll, Mary Ann; Frontenac.
Carter, Anna E.; *Joplin, Mo.*
Carter, Mary Ota; Chanute.
Carver, Sullie Blanche; Atlanta.
Chambers, Estella Mae; Coffeyville.
Chambers, Mira Jane; Fort Scott.
Chambers, Zenia; Hepler.
Chase, Alice C.; Wichita.
Childs, Sister M. Dorothea; Wichita.
Clarahan, Sister M. Augustine; Newton.
Clark, Anderson Edmond; Parsons.
Clark, Mrs. Blanche Barnes; Oswego.
Clark, Harriette Ann; *Carthage, Mo.*
Clark, Laura Viola; Bartlett.
Clark, Wilmoth; Mound Valley.
Clayton, Mrs. Nora; *Joplin, Mo.*
Cleavinger, Hattie; Lowemont.
Clinkenbeard, Lucy Irene; Altamont.
Clouse, Alpha Rachel; Stark.
Coile, Ralph J.; Howard.
Coleman, Arthur Garfield; Sterling.
Coles, Winifred Aline; *Joplin, Mo.*
Collins, Richard W.; Columbus.
Condra, Theo. Lee; Independence.
Congdon, Mildred; *Kansas City, Mo.*
Conklin, Inez; *Asbury, Mo.*
Conklin, Ruth Lily; *Asbury, Mo.*
Cook, Van Loren; Mulberry.
Copenhaver, Daphene D.; Girard.
Corbey, Myrtle Lee; Pittsburg.
Cornish, Hester Mae; Cheney.
Costello, Mary; Pittsburg.
Crane, Eunice McDevitt; Oswego.
Crayton, Anna N.; Parsons.
Crihfield, Tillie Pinckard; Ashland.
Croft, Gladyse Marie; *Stotesbury, Mo.*
Cronin, Alice; Pittsburg.
Cunningham, Velma Baldwin; Pittsburg.
Curnow, Carl Goodwin; Pittsburg.
Curran, Alice Theresa; Rosedale.
Dalby, Floy Ethel; Havana.
Damm, Lillian E.; *Joplin, Mo.*
Dana, Ina May; Gardner.
Daniels, Ella H.; *Joplin, Mo.*
Davidson, Ethel; Chanute.
Davis, Edna Elizabeth; Longton.
Davis, Faye; Altoona.
Davis, Ruth Elizabeth; Garland.
Dennis, Genevieve Alice; Olathe.
Dennis, Grace Lenore; Pittsburg.
Dewey, Mary; Pittsburg.
Dewhirst, Mabel N.; Farlington.
Dewhirst, Nina Esther; Farlington.
Dickinson, Mrs. Fannie Boston; *Webb City, Mo.*
Dills, Edna May; Baxter.
Dobson, Lenore Booth; Edna.
Dolan, Ellen Mae; Fleming.
Doring, Floyd; Pittsburg.
Dougherty, Julia; Parsons.
Downing, Mabel Evelyn; *Joplin, Mo.*
Dues, Ollie Matthews; Pittsburg.
Dugger, Clara May; Columbus.
Dunn, Eupha LaVon; Girard.
Dyer, Rowena Opal; Pittsburg.
Early, Thomas Deforest; Pittsburg.
Edwards, Vesta Marie; Iola.
Eisenhart, Beatrice Eleanor; Franklin.
Elder, Adaline Leith; Pittsburg.
Elledge, Elizabeth F.; Parsons.
Elliott, Ima; Morehead.
Elliott, Ivah Josephine; Morehead.
Elliott, Pearl Ellen; Savonburg.
Elswick, Lois; Parsons.
End, Josephine Pauline; Fort Scott.
Endicott, Luella Eilene; Pittsburg.
Eppright, F. O.; Ingalls.

Sophomores—*Continued.*

Erwin, Alma Lee; Buford.
Etchen, Mrs. Gertrude; Coffeyville.
Evans, Mozella; Independence.
Evans, Myril Anne; Independence.
Evans, Nora Etta; McCune.
Everett, Faye; Independence.
Falls, Gwendolyn; Altoona.
Falls, Olive; Altoona.
Farrington, Veda Fern; Chetopa.
Fenn, Mary Nelle; *Joplin, Mo.*
Ferguson, Minta Marie; Pittsburg.
Ferns, Mrs. Ada Margaret; Pittsburg.
Field, June Elizabeth; Columbus.
Fields, Mrs. Lillian Melvin; Pittsburg.
Fields, Raymond Erastus; Pittsburg.
Foreman, Vivian Alberta; Cherokee.
Forrester, Hazel Louise; Girard.
Foster, Marguerite Mary; Morehead.
Fowler, Rowena Juanita; *Luther, Okla.*
Francisco, Winifred; Oswego.
Frazier, Elizabeth Muriel; Walnut.
Frazier, Marian; Girard.
Gail, Theodore Henry; Chetopa.
Gail, Walter; Rosedale.
Gantz, Albert Lee; Nickerson.
Gardner, Margaret Elsworth; Pittsburg.
Gaw, Lena Beam; Independence.
Geeder, Katherine Gibson; Pittsburg.
Geier, Elsie; *Joplin, Mo.*
German, Frank Cliffton; Mapleton.
Gibson, Paul Roosevelt; *Okmulgee, Okla.*
Gilbert, Grace Mae; McCune.
Gilbreath, Hazel Jean; Pittsburg.
Glynn, Sister Margaret Mary; Paola.
Gold, Mrs. Ernest J.; *Cleghorn, Iowa.*
Good, John Melvin; Louisburg.
Good, Paul Harold; Wichita.
Gossett, Serena May; Pittsburg.
Graham, Ines Estella; Pittsburg.
Gray, Jane Sherwood; Pittsburg.
Gregg, Helen S.; Pittsburg.
Grimes, Harry Nelson; Louisburg.
Grimes, Mrs. Minnie S.; Atchison.
Guthridge, Lea A.; Pittsburg.
Hadlock, Edith Ermine; Cherokee.
Hainline, Irma Slater; El Dorado.
Hall, Ida Mildred; Wichita.
Halliday, Mary Jane; Mulberry.
Hamilton, Bernice June; McCune.
Hamilton, Genevieve Crotty; Pittsburg.
Hammond, Forrest Fern; Mulberry.
Harley, LaVerne Myrtle; Fort Scott.
Harley, S. Helen; El Dorado.
Harmon, Margaret; Sedan.
Harris, Edgar Walter; *Kansas City, Mo.*
Harwood, Olive; El Dorado.
Haynes, Eulala Pauline; Kansas City.
Haynes, Vivian Delpha; La Cygne.
Heckathorn, Velma; *Carthage, Mo.*
Heckethorn, Lester O.; Emporia.
Hedges, Anna E. F.; Coffeyvllle.
Hedges, Genevia Falkenburgh; Coffeyville.
Helm, Anna Lena; *Joplin, Mo.*
Hembree, Ethel Lea; Mulberry.
Hemphill, Margaret Ellen; Chanute.
Hemphill, Martha Janet; Chanute.
Henderson, Mrs. Lorena; *Joplin, Mo.*
Henderson, Stella May; Moran.
Hendrick, Lillith Lenore; Sedan.
Herron, Darlene Hazel; Pittsburg.
Herron, Mary Frances; Sterling.
Hiatt, Grace O.; Blue Mound.
Hollingsworth, Vesta Allene; McPherson.
Hoppes, Ruth V.; Mulberry.
Horton, Mayre Dee; *Guthrie, Okla.*
Howard, Ivy Ruth; Cherryvale.
Hubbart, Lola Clementine; Fort Scott.
Hudiberg, Leo Everett; Independence.
Hudson, Harold; Pittsburg.
Huffman, Clarice D.; Hepler.
Hunker, Ruth Dorothy; Fort Scott.
Hunt, Besse Cecilia; Pittsburg.
Hurd, Dolly Mae; Pittsburg.
Hutcheson, Dallas Paul; Pittsburg.
Hyland, Sister Mary Delphine; Coffeyville.
Iori, Mary May; Foxtown.
Irwin, Ruth; Chanute.
Isenman, Ina; Pittsburg.
Iserman, Ruth Lillian; Pittsburg.
Jaccard, Carrie; *Joplin, Mo.*
Jack, Pearl Irma; Wichita.
Jackson, Marjorie; *Plymouth, Wis.*
James, Mrs. Ellen Falls; Pittsburg.
Jenkins, Gladys; Independence.
Jewell, Helen C.; Fulton.
Jewell, Nellie Rose; Fulton.
Johnson, Anna Pauline; Parsons.
Johnson, Eva Catherine; Weir.
Johnson, Hazel Buehrler; Oswego.
Junko, Kathryne Constance; Soph.
Karn, Retta Mae; Angola.
Kautz, Bernice; Girard.
Keating, Mary Cecelia; Fort Scott.
Kelly, Regina Anne; Frontenac.
Kennedy, Leah Maurene; Coffeyville.
Kennedy, Ruth Marguerite; Girard.
Kenney, Margaret Lucy; Mound City.
Kidder, Maurice Arthur; Pittsburg.
Kimmey, Reevel Ruth; Erie.
King, Edith Julia; Pittsburg.
King, Etna Irene; *Chelsea, Okla.*
King, William Franklin; Pittsburg.
Kirk, Dora; Mound Valley.
Knight, Corinne Mae; Fort Scott.
Knight, Lewis G.; *Joplin, Mo.*
Knight, Raymond William; Girard.
Kniss, Minnie; Altamont.
Koontz, Alta Mae; Columbus.
Koontz, Andrew E.; Columbus.
Koontz, J. H.; Parsons.
Koopman, Frederick Louis; Pittsburg.
Krieckhaus, Harriette Katherine; *Oakland, Mo.*
Lange, Adeline Gail; *Alliance, Neb.*
Langford, Lena Marie; Rosedale.
Lanning, Margaret; Frontenac.
Larson, Lily Edna; Columbus.
Lee, Mrs. Eleanor L.; Parsons.
Leggett, Lucy Anna; Columbus.
Lesher, Louise; Pittsburg.
Liggett, Nellie V.; Galena.
Lillibridge, Cynthia Grace; Independence.
Limb, Earl Raymond; Scammon.
Limb, Emma Irene; Girard.
Limity, Katie Marie; Pittsburg.
Lodle, George Arthur; Emporia.
Loehr, Esther; *Carthage, Mo.*
Lomax, Mary Elsie; Cherryvale.
Long, Ada Claire; Rosedale.
Lonberger, Katharine L.; Parsons.
Loudenslager, Nina Marie; Pittsburg.
Loveless, William Franklin; Ness City.
Lucas, Alma Joann; Pittsburg.
Lucas, George; Pittsburg.
Ludloy, James Herbert; Pittsburg.
Lyngar, Marjorie M.; *Carthage, Mo.*
Lyon, Rudencia Florence; Fredonia.
McBride, Cornelia; Treece.
McCaskill, Agnes Ruby; Pittsburg.
McCleary, Hazel Alphonzine; Pittsburg.
McClelland, Alice; Olathe.
McCoy, Alene Lynn; Pittsburg.
McCray, John Hermann; Pittsburg.
McCurry, Leona Bell; Peru.

SOPHOMORES—*Continued.*

McCurry, Ruth; Peru.
McKinley, Lyle Bernard; Pittsburg.
McLaughlin, Elizabeth; Monmouth.
McLaughlin, Lida; Monmouth.
McLaughlin, Mildred Lee; *Lamar, Mo.*
Mantooth, Frank B.; Scammon.
Marie, Sister Mel; Parsons.
Marsh, Edith Katherine; Pittsburg.
Marshall, Mabel Sloan; Colony.
Martin, Hazel Shapley; *Lamar, Mo.*
Masters, Ethel Evalyn; Pittsburg.
Masterson, C. May; Fort Scott.
Mathes, Fern Cleone; Pittsburg.
Matney, Hyacinth Alta; Wichita.
Mattison, Everett P.; Mt. Hope.
Meehan, Edward John; Pittsburg.
Mellen, Edna Charlotte; Parsons.
Menchetti, Albert A.; Frontenac.
Mendenhall, Clarence J.; La Cygne.
Mertins, Helen B.; *Carthage, Mo.*
Metcalf, Patti Elsa; Colony.
Millard, Maggie Smiley; Pittsburg.
Miller, Ethel Ray; Independence.
Mitchell, Thelma Lois; Pittsburg.
Moherman, Laura F. C. B., Wellsville.
Molohan, Irene; Parsons.
Moore, Mattie; Parsons.
Moran, Kathryn V.; *Webb City, Mo.*
Morgan, Lena Raye; Weir.
Mortimer, Dot G.; Cherryvale.
Moser, Amelia Edna; Stillwell.
Mullen, Harvey; Stafford.
Mullikin, Ida Caroline; Cherryvale.
Munday, Willie (Miss), *Joplin, Mo.*
Murn, Evelyn Frances; Frontenac.
Murphy, Mrs. Ethel Christenson; West Mineral.
Murphy, Minnie Blanche; Chetopa.
Murray, Janet Mackie; Scammon.
Myers, Jewell, E.; Weir.
Myers, Louise Marie; Haven.
Nelson, Sarah H.; Topeka.
Newcomer, Charles Andrew; Galena.
Newman, Alma; Pittsburg.
Newman, Clara; Pittsburg.
Nifong, Georgia Marie; Pittsburg.
O'Bryan, Iola; Girard.
O'Dell, Clyde Herman; Pittsburg.
O'Hara, Josephine Zeta; Frontenac.
O'Neall, Beatrice Carolton; *Carthage, Mo.*
Opdyke, Anne Middleton; *Hedgesville, Mont.*
Opie, Earle Frank; Pittsburg.
Osterman, Hulda Clara; Pittsburg.
Pahlow, Hanna; *Lamar, Mo.*
Palling, Dorothy; Pleasanton.
Payton, Walter B.; *Blackwell, Okla.*
Peak, Emma Victorine; Girard.
Pearce, George Thomas; Sterling.
Pease, Ruth Theodora; Pittsburg.
Peck, Mary; Burden.
Perry, Florence Lucile; Randall.
Pellett, Myrtle Elizabeth; Wellston.
Perrine, Vivian; *Siloam Springs, Ark.*
Pettiner, Esther M.; Coffeyville.
Pfleger, Esther Estelle; Eudora.
Philips, Harvey Gordon; Pittsburg.
Pierce, Frances Don Hailey; Pittsburg.
Pitts, Zetta C.; Augusta.
Popkins, James Robert; Halstead.
Potter, Pauline Lavone; Pittsburg.
Poundstone, Thelma Irene; *Joplin, Mo.*
Prentice, Anna Mae; *Aldrich, Ala.*
Preston, Leana Alice; Agricola.
Prewitt, George Edward; Coffeville.
Price, Dewey Herman; Pittsburg.
Pritchett, Athlyn Conover; Hoisington.
Provan, Margaret Mae; Arcadia.
Pugh, Virgil; *Hot Lava Springs, Idaho.*
Puls, Katie; Attica.
Reed, Olive M.; *Liberal, Mo.*
Regan, Agnes Margaret; *Joplin, Mo.*
Regan, Dora; *Joplin, Mo.*
Reid, Helen Marie; Morehead.
Reid, Irene; Pittsburg.
Reynolds, Ernest William; Fort Scott.
Reynolds, Roy C.; Fort Scott.
Riordan, Bridget Mary; Pittsburg.
Roberts, Eva Marguerite; Girard.
Roberts, Richard H.; Winfield.
Rodgers, Maytie A.; El Dorado.
Rogers, Rose S.; *Picher, Okla.*
Rondelli, John; Chicopee.
Roseberry, Edith Marie; St. Paul.
Roseberry, Minnie Loretta; Erie.
Roseboom, Martha Priscilla; Girard.
Royse, Edward E.; *Caddoa, Colo.*
Russell, Ruth; Stafford.
Ryan, Richard Morgan; Pittsburg.
Sampica, Mary Harriet; Treece.
Sanders, Almeda May; Bennington.
Sare, Emma H.; Chanute.
Sare, Neda Nelda; Erie.
Sauer, E. L.; Coffeyville.
Schuster, Rachel; Ozawkie.
Schwab, John William; Pittsburg.
Scott, Elsie Mary; Weir.
Scott, Lewis William; Parsons.
Sell, Paul; Pittsburg.
Sellers, Utha Myrl; Randall.
Sevier, Amy Viola; Coffeyville.
Seymour, Esther; Columbus.
Shaughnessy, Sister Jerome; Paola.
Shaw, Mary Josephine; La Cygne.
Shaw, Wave Mildred; *Claremore, Okla.*
Sheldon, Donald R.; Pittsburg.
Sheldon, Mabel Marie; Altamont.
Shiefelbein, Faye Shirley; Pittsburg.
Shirron, Beulah Eleanora; Coffeyville.
Shumate, Nettie Cynthia; Nortonville.
Skelton, Evelyn Gertrude; Pittsburg.
Skidmore, James Edward; Columbus.
Smiley, Lydia Wilmoth; Hugoton.
Smith, Edith Mae; Pittsburg.
Smith, Elizabeth Pearl; Pittsburg.
Smith, Evelyn Alma; Pittsburg.
Smith, Gerald Walker; Pittsburg.
Smith, Helene Edmunds; Chetopa.
Smith, Mary Alpha; Chanute.
Smith, Nora Edith; Parsons.
Snyder, Mary Elva; Pittsburg.
Stahley, Edith Gladys; Mulberry.
Staib, Agnes; Pittsburg.
Stamm, Ruth; Pittsburg.
Stanley, Lula M.; *Carthage, Mo.*
Starr, Grace Marjorie; Pittsburg.
Stelle, Charles William; Pittsburg.
Stephens, Edith Mae; *Joplin, Mo.*
Stephens, Helen Lenore; Columbus.
Sterling, Ursa Mae; Cimarron.
Stewart, Bertha Luella; Cherryvale.
Stewart, Lora Beatrice; Independence.
Stillwaugh, James Andrew; Cherryvale.
Streeter, Ethel Verle; Fort Scott.
Strother, Luetta May; Fort Scott.
Swartz, Helen Irene; Robinson.
Tabor, Ella Lou; Parsons.
Talbott, Mina Corrinne; *Kansas City, Mo.*
Tangner, Alma Marie; *Carthage, Mo.*
Tate, Nina; Coffeyville.
Tedlock, Neva E.; Columbus.
Tedlock, Thurman Elijah; Columbus.
Thornton, Edith Alice; *Eufala, Okla.*
Todd, Lora; Cherryvale.

SOPHOMORES—*Concluded.*

Toft, Vivienne; Grinnell.
Todd, Edith Ianthe; Coffeyville.
Toy, Claire Allene; Cherryvale.
Toy, Laura Elizabeth; Cherryvale.
Trible, Blanche Leona; Independence.
Tullis, Ella; Olathe.
Turrill, Coral Mary; Weir.
Utz, Mary Agatha; Pittsburg.
Vehlow, Fred Ronald; Savonburg.
Vermillion, Carl M.; Tescott.
Vessadine, Anita Gennie; Mulberry.
Vohs, Sister Mary Luke; Wichita.
Voss, Mrs. Harriette Salsman; Pittsburg.
Waddle, Bertha; Osage City.
Walker, Maurice Andrew; Columbus.
Walker, Nellie Vivian; Pittsburg.
Walters, Clyde E.; Atchison.
Webb, Gladys M.; Girard.
Webb, Lela Maude; Galena.
Webb, Simeon; Mulberry.
Weir, Bertie Thelma; Pittsburg.
Wheatley, Emelyn Mathews; Parsons.
Whitaker, Gladys; Pittsburg.
White, Helen Templeton; Weir.
Whitehead, Mildred Augusta; Walnut.
Wikoff, Leo Charles; Hutchinson.
Willard, Loneta; Arcadia.
Williams, Hazel A.; *Joplin, Mo.*
Williams, Ida Overton; Holton.
Williams, Lizzie N.; Peru.
Williams, Nellie; Chetopa.
Williams, Una H.; *Liberal, Mo.*
Williams, Vera Marguerite; Coffeyville.
Williams, Veda Marie; Coffeyville.
Willis, Edna Frances; Parsons.
Willis, William Roy; Parsons.
Wilson, Mrs. Luna M.; Pittsburg.
Wilson, Vera Julia; Altoona.
Wims, Beulah Pauline; Topeka.
Wise, Laura Dale; Louisburg.
Wise, Verna B.; Louisburg.
Wood, Bertha; Mulberry.
Wood, Marie Elizabeth; Fort Scott.
Worthington, Alta Butcher; Galena.
Wrestler, Ferna Eldoona; Walnut.
Wright, Naomi Dorothea; Pittsburg.
Yartz, Mayme Christene; Frontenac.
Yates, Gladys; Pittsburg.
Young, Ruth Elizabeth; Weir.
Zimmerman, Ruby C.; Hutchinson.
Zook, Harry Elmer; Larned.

FRESHMEN.

Abbey, Grace Izetta; Galena.
Adams, Hazel Dell; Oil Hill.
Adamson, La Vaughn; Girard.
Alexander, Claire W.; Pittsburg.
Allen, Bernice; Hewins.
Allen, Mrs. Claude; *Joplin, Mo.*
Allen, Freida; Galena.
Allen, Julia Heath; Baxter Springs.
Allen, Lillian Maude; Galena.
Allen, Mac Arner; Pittsburg.
Allen, May; Gardner.
Allen, Stella Mary; Pittsburg.
Allman, Lela May; *Pineville, Mo.*
Alvysia, Sister M.; Great Bend.
Alyea, Paul Jones; Atchison.
Amos, Olive Mae; Columbus.
Anderson, Anna Louise; Osage City.
Anderson, Hazel Lillian; Bronson.
Anderson, Leona Pearl; Columbus.
Anderson, Louise Izetta; Emporia.
Ard, Golda May; Elsmore.
Armour, Blanche Louise; Neosho Falls.
Armstrong, Lucy June; Franklin.
Arndt, Margaret Annie; *Liberal, Mo.*
Ashby, Beulah Faye; Liberty.
Attkisson, Cora May; Cherryvale.
Attkisson, Eula Marie; Hepler.
Austin, Katie; Fulton.
Austin, Ruby Mary; Mulberry.
Bacchus, Sydney Mary; Parsons.
Bader, Helen Elizabeth; Lansing.
Bailey, Mary Claire; Mulberry.
Baird, David Lester; Pleasanton.
Baird, Edna Grace; Fontana.
Baird, John Harris; Fontana.
Baird, Marcia Nadine; Pleasanton.
Baker, Juanita Belle; Altamont.
Baldwin, Lillian W.; *Carterville, Mo.*
Bales, Helen Bernice; McCune.
Bales, Sanilla Alba; South Mound.
Ball, Elizabeth Dejon; Olathe.
Ball, Grace Mildred; Mapleton.
Banks, Mary Ruth; Salina.
Banta, Clifton Edward; Pittsburg.
Barber, Velma Plavilla; *Madill, Okla.*
Barnes, Albert Floyd; *Pineville, Mo.*
Barnes, Edna Belle; Mound Valley.
Barnett, Barbara Anna; Fulton.
Barton, Ruby Maurine; Pittsburg.
Bass, Sadie; Fort Scott.
Bassett, Blanche S.; Walnut.
Bassett, M. Grace; Walnut.
Baty, Margaret Jennie; Independence.
Baty, Theresa Elizabeth; Independence.
Bedell, Beulah; *Carthage, Mo.*
Beecher, Phyllis E.; Pittsburg.
Behmer, Melba L. Maxine; Hamilton.
Belknap, Jessie May; Oswego.
Bell, Esther; Scammon.
Bell, Evajean Sheffield; Arcadia.
Bennett, Doris Marie; Scammon.
Benninghoff, Norma; *Tulsa, Okla.*
Bergman, Esther E.; Scammon.
Bernard, Grace Virginia; Parsons.
Bernard, Sara Eileen; Mulberry.
Berry, Pearl Mae; *Joplin, Mo.*
Bethel, Faye; *Anderson, Mo.*
Bewley, William Allen; Gem.
Bivins, Ida Lovella Stark; Fall River.
Black, Mrs. H. E.; Pittsburg.
Black, Pearl Margaret; Coffeyville.
Blair, Loran R.; West Mineral.
Bloxom, Martha A.; Independence.
Boggs, Cadet Paul Anderson; *Joplin, Mo.*
Boice, Lucy Esther; Paola.
Bolin, Mrs. Effie; Fort Scott.
Bolinger, Hazel; Redfield.
Bolton, Janet Belle; Coffeyville.
Bond, Lela Mae; Columbus.
Bonebrake, Eula Vurnice; *Pineville, Mo.*
Bonggess, Dale Birt; Kansas City.
Booher, Ella; *Webb City, Mo.*
Booth, Nellie Opal; Baxter Springs.
Boots, Mary Grace; Centerville.
Borders, Dannie May; Weir.
Bourland, Albert; Columbus.
Bowens, Mrs. Veomia Pyle; Pittsburg.
Bowers, Vera Ulrica; Cherryvale.
Bowlus, Ardie F.; Mulberry.
Bowman, John William; Caney.
Bowman, Pearl Bettina; Parsons.
Bowman, Ruth Winifred; *Neosho, Mo.*
Bradfield, Musa D.; *Siloam Springs, Ark.*
Bradshaw, Anna Mae; Chanute.
Braley, George Ellison; Horton.
Bramlette, Mrs. Hattie L.; Columbus.

FRESHMEN—*Continued.*

Brandenburg, Harold Penfield; Pittsburg.
Bransom, Elsie Edith; Scammon.
Breedlove, Lucille; *Picher, Okla.*
Brewster, Ethel Smith; Parsons.
Briggs, Kate L.; Olathe.
Briggs, Opal Iona; *Neosho, Mo.*
Brisco, Edith Jeanette; Parsons.
Brittain, Eva Edna; White City.
Broadhurst, LaVerne Debby; Eudora.
Broadlick, Edith; Pittsburg.
Brooks, Geneva Hansel; Burden.
Brown, Bessie Mae; Fort Scott.
Brown, Dewey Wheeler; Dexter.
Brown, Donna Merle; Dexter.
Brown, Flossa Faye; Cherokee.
Brown, Helen E.; Leavenworth.
Brown, Lena Lenora; Grenola.
Brown, Lottie Imogene; Junction City.
Brown, Mary Jane; Uniontown.
Brown, Vanche May; Neosho Rapids.
Brubaker, Alane Minerva; Chetopa.
Bruce, Katherine Nell; Weir.
Brunke, Helen Irene; Altoona.
Bryan, Cleta Glendora; Baxter.
Bryan, Leota Alma; Baxter.
Bryson, Bessie Christana; Dennis.
Buchanan, Edith; Fort Scott.
Buchanan, Esther; Arcadia.
Buckles, Freda Cathaleen; Peru.
Bullock, Darlene; Holliday.
Burch, Edna May; McCune.
Burden, Essie Maye; Oswego.
Burks, Mae Viola; Paola.
Burway, Elizabeth; Stillwell.
Buss, Carrie Henrietta; Walnut.
Butcher, Hazel Edith; El Dorado.
Butler, Mary Ellen; Walnut.
Butts, Ina S.; Nickerson.
Butts, Lottie E.; Pleasanton.
Butts, Lulu; Mound Valley.
Buzard, Mabel Cornelia; McCune.
Caldwell, Ruth Mae; Pittsburg.
Calkins, Leona Mae; *Joplin, Mo.*
Callahan, M. A.; Girard.
Cameron, Cora Marie; Altamont.
Cameron, Drummond Wallace; Fort Scott.
Campbell, Clara Ethel; Oswego.
Campbell, Inez Lou Retta; Basil.
Campbell, Marion Isabelle; Grenola.
Canfield, Marguerite Mary; Scammon.
Canfield, Theressa Sara; Scammon.
Canine, Celia H.; Cedar Vale.
Canine, Viola Russell; Cedar Vale.
Canty, Jessie Margaret; Buffalo.
Capps, Cleta Fredonia; Pittsburg.
Carl, Star; Arma.
Carleton, Mrs. Blanche Annette; Mulberry.
Carlson, Evangeline Eleanor; Chanute.
Carlton, Laura Etta; Edna.
Carpenter, Claire Marie; Thaver.
Carpenter, Mildred Fern V.; Thayer.
Carson, Bernice Alma; Cherryvale.
Carter, Helena Esther; Pittsburg.
Carter, Loren H.; Russell.
Carter, Nellie; *Siloam Springs, Ark.*
Carter, Rosebella; *Carthage, Mo.*
Caruthers, Fern; *Neosho, Mo.*
Case, Clyde Harold; Coffeyville.
Case, Ophel Pearl; Columbus.
Cash, Anna Lorene; Columbus.
Cash, Goldie Sylvia; Uniontown.
Cash, Oren A.; Winfield.
Casper, Elsie Leona; Erie.
Cather, H. Grace; *Jasper, Mo.*
Catlett, Amy; Pittsburg.
Cavenne, Hazel Ruth; Cedar Vale.
Cecil, Neva Grace; Mound Valley.
Chaffin, Beulah Mae; *Huntington, W. Va.*
Chambers, Belle; Dearing.
Chambers, Margaret H.; Hiattville.
Champlin, Clara Mildred; Cedar Vale.
Champlin, Goldie Evoline; Cedar Vale.
Champlin, Sylvia Marie; Cedar Vale.
Chapman, Mary Helen; *Newtonia, Mo.*
Cheesman, Marjorie Mozella; Parsons.
Chenoweth, Etta Belle; Mapleton.
Chitwood, Josephine Lucile; *Carl Junction, Mo.*
Christman, Fredrick Nelson,; *Joplin, Mo.*
Church, Martha Ruth; Pittsburg.
Clark, Josephine Ruby; Bartlett.
Clark, Margaret; Mulberry.
Clarke, Susan Emery; Baxter Springs.
Clarkson, Leota Evelyn; Redfield.
Clayton, Ione; *Joplin, Mo.*
Clemens, Hazel Mae; Pittsburg.
Clemens, Mary Mabel; Pittsburg.
Cline, Bertha C.; Columbus.
Cline, Mary Billy; Erie.
Cline, Zelma Rose; McPherson.
Clugsten, Vedah Elsie; McCune.
Coe, Mary Elizabeth; Thayer.
Coffey, Julian; Pittsburg.
Collins, Elsie Fern; Walnut.
Colson, Mrs. Vida M.; *Joplin, Mo.*
Colwell, Blanche Lavone; Elsmore.
Comer, Naomi Elizabeth; Pittsburg.
Conard, Seth C.; Pittsburg.
Condiff, Gertrude Ellen; Mulberry.
Condra, Edna Allen; Independence.
Condra, Minnie A.; Independence.
Conkright, Lora Helen; Chanute.
Conley, Katharine; Fontana.
Convirs, Callie; *Siloam Springs, Ark.*
Conwell, Vera Iona; Topeka.
Cook, John Milton; Independence.
Cook, Mrs. Minnie May Claxton; Parsons.
Cooke, Dorothy Elizabeth; Baxter Springs.
Cook, Lillian Gwendolyn; Baxter Springs.
Cool, Edith Fern; Columbus.
Cooper, Audrey Muriel; Bird City.
Cooper, Viva O.; Bronson.
Copeland, Julia Ellen; Girard.
Corning, Ella Hitch; *Sand Springs, Okla.*
Correll, Hazel Angie; Galena.
Cottingim, Kitty Elizabeth; Parsons.
Courtois, Juliet Elisa; Columbus.
Covey, Agnes Louise; Baxter Springs.
Cox, Marie; Walnut.
Cox, Olive Etta; Elsmore.
Cramer, Mary Bess; Moran.
Crawford, Ruth Allene; Girard.
Crites, Windess E.; Farlington.
Crockett, Edna E.; Mulberry.
Croft, Jack W.; Pittsburg.
Cronin, Michael James; Pittsburg.
Cronin, Ruth Mary; Pittsburg.
Cropper, Thelma Fern; Pittsburg.
Crowder, Irva Edyth; Altoona.
Crowder, Margaret Keith; *Carthage, Mo.*
Cruzan, Eva Esther; Parsons.
Culver, Mildred Patti; Fredonia.
Cunningham, Charles Raymond; Englevale.
Cunningham, Elizabeth Outhwaite; Carona.
Cunningham, Ethel Evelyn; Independence.
Cunningham, Lola Lillian; Pittsburg.
Curran, Thomas Francis; Pittsburg.
Cuthbertson, Jessie Juanita; Girard.
Daggett, Elfleda Belle; Parsons.
Dallas, Wylie Roy; *Shawnee, Okla.*
Darling, Xina Blanche; Mound Valley.
Daugherty, Virgie Esthus; Bayard.
Davenport, Bertha Oletha; Arcadia.
Davidson, Alda; Girard.
Davidson, Clara Belle; *Lamar, Mo.*

FRESHMEN—*Continued.*

Davidson, Edna May; *Lamar, Mo.*
Davidson, Lallah Sherman; Galena.
Davis, Anna Cecelia Pope; Mulberry.
Davis, Elda Alvena; Mound City.
Davis, Hiram; Longton.
Davis, Mary Louise; *Neosho, Mo.*
Davis, Mattie C.; Kansas City.
Davis, Mildred Blanche; Ingalls.
Daxon, Alice Mardell; Parsons.
Deill, Ada Mabel; McCune.
Demmon, Nellie Leora; Pittsburg.
De Moss, Nora Louisa; Monmouth.
Demuth, Lida Caroline; Pittsburg.
Detmering, Ora Ada; Fontana.
Devereux, Ellen Wade; Weir.
Devers, Mrs. Laura Kenaston; *Carthage, Mo.*
Dewell, Opal Mavis; Stark.
Dick, Hallie May; Girard.
Dickey, Lillie Belle; Bayard.
Dickinson, Thomas Herbert; Pittsburg.
Dicus, Mabel Dean; Lansing.
Didlake, Raymonde E.; Hepler.
Dienst, Fern; Coffeyville.
Dillen, Sister Mary Felix; Independence.
Dills, Fern Emily; Redfield.
Ditson, Dora Isabelle; Galena.
Ditson, Jessie Anna; Galena.
Doherty, Sister M. Xavier; Pittsburg.
Dollard, Virgie May; Attica.
Donovan, Gladys; Gardner.
Dooley, Mae Louise; Ford.
Dorsey, Arthur M.; Weir.
Doughman, Marguerite; Parsons.
Douglas, Ruth Eldora; Columbus.
Dragoo, Mrs. Ruth Morgan; Topeka.
Dressler, Myrtle I.; Hutchinson.
Driscoll, Mary Margaret; Wichita.
Duff, Lois Frances; Baxter Springs.
Dugger, Faye Hazel; Columbus.
Duggins, Nellie R.; Olathe.
Dunham, Ola Z.; Pittsburg.
Dunton, Clair; Arcadia.
Dye, Elizabeth Louise; *Neosho, Mo.*
Ealy, Mildred Fern; Mound Valley.
Easley, Alda Florence; Scott City.
Eaton, Frances Naomi; Galesburg.
Eaton, Ivah; Galesburg.
Eber, Mary T.; Croweburg.
Eby, Nucia B.; New Albany.
Edmonson, Opal Mae; Cherokee.
Edwards, Izora B.; Walnut.
Edwards, Julia Frances; Iola.
Egger, Lucy Juliene; West Mineral.
Eisenhart, Vera Marie; Scammon.
Eller, Frances; Carona.
Elliff, Mae Hewitt; *Pineville, Mo.*
Elliff, Miles A.; *Pineville, Mo.*
Elliott, Anna; Dearing.
Elliott, Lottie Irene; Pittsburg.
Elliott, William Harold; Savonburg.
Ellis, Mrs. Rose; Holliday.
Emerson, Helen; Baxter Springs.
Emming, Ida Catherine; Coffeyville.
Endicott, Charles Lafayette; Pittsburg.
Endicott, George; Arcadia.
Enloe, Ethel; Hepler.
Ensor, Marshall Hamilton; Olathe.
Epley, Eva May; Beulah.
Erker, Emma E.; Wichita.
Estes, Ollie B.; Baxter.
Evans, Mary Olive; Columbus.
Evans, Wilbur Burk; Fontana.
Fair, Myrtle C.; Hutchinson.
Fairman, Evelyn Marie; Altamont.
Falkenstein, Jessie Lucille; Chetopa
Farner, Essie Pearl; Pittsburg.
Farrimond, Edna; Arma.
Feemster, Clara; Fulton.
Fehrenbach, Josephine Mary; *Joplin, Mo.*
Fell, Elizabeth; Columbus.
Fell, Ida; Columbus.
Ferguson, Bessie; Weir.
Ferguson, Minta Marie; Pittsburg.
Ferguson, Pansy Alta; Pittsburg.
Fieser, Clara Lydia; Harper.
File, Lena Vera; Pittsburg.
Finley, Sister M. Dympna; Parsons.
Fisher, Lydia Anne; *Jefferson City, Mo.*
Fisher, Mabel; Weir.
Flagg, Darlene Hazel; Pittsburg.
Flesher, Stella; *Jasper, Mo.*
Fletcher, Aura Adeline; Pleasanton.
Flickinger, Zelma; Moline.
Floyd, Alice Josephine; Sedan.
Fonburg, Alta Fern; Arcadia.
Foote, Winifred E.; Spring Hill.
Force, Susan Kate; *Marshall, Mo.*
Forrester, Ethel Lea; Moline.
Foust, Ralph Edward; Erie.
Fowler, Thelma Mae; Arcadia.
Fox, Beatrice Allie; Mulberry.
Fox, Hattie LeCompte; *Carthage, Mo.*
Frame, Mary Cyrene; McCune.
Francisco, Birdie Beatrice; Oswego.
Franklin, Inez; Winfield.
Frasure, Gladys Rebecca; Fort Scott.
Frazier, Mabel Elizabeth; Ingalls.
Fry, Mary Jane; *Claremore, Okla.*
Furneaux, Evva Aldora; Walnut.
Gable, Esther; Pittsburg.
Gaddy, Kate Irene; Angola.
Garboe, Thelma Alice; Olathe.
Gard, Irene Estell; Wichita.
Gardner, Velma; Pittsburg.
Gaston, C. B.; Pittsburg.
Gates, Virginia L.; Pittsburg.
Gaw, Esther Grimes; Girard.
Gendusa, Joe; Pittsburg.
George, Gladys Virginia; Mound Valley.
Gerkin, Georgene Leigh; Girard.
Gibbons, Goldie May; Olathe.
Giffin, Mrs. Maude; Iola.
Giggy, Jessie; Milton.
Gilbert, Hawley E.; *Alba, Mo.*
Gilbreath, Jim; Pittsburg.
Gillen, Hazel Inez; Independence.
Gillett, Bessie; Coffeyville.
Gillett, Flossie; *Tulsa, Okla.*
Gillett, Ruby; *Tulsa, Okla.*
Gilmore, Florence Ella; Columbus.
Gilmore, David Gibson; Pittsburg.
Glasscock, Edith Henrietta; Moline.
Golden, Lola Katie; Sedan.
Goodrich, Mrs. Jane F.; Burden.
Goodwin, Margie May; Pittsburg.
Gordon, Winnie Gertrude; Paola.
Gorman, Edna Williams; Galena.
Graham, Georgia Lucille; Coffeyville.
Graham, Margaret; Pittsburg.
Graham, Margery Ellen; *Vinita, Okla.*
Grant, Elizabeth; Scammon.
Greef, Fred; Pittsburg.
Green, Esther Loraine; Morehead.
Green, Hazel Dell; Springfield.
Green, Teresa L.; *Wentworth, Mo.*
Greenfield, Helen Olive; McCune.
Greer, Agnes Ophelia; Cherokee.
Greer, Leland Vee; Cherokee.
Gregory, Blanche; Walnut.
Gregory, Ruth Eleanor; Scammon.
Griffith, Marie; Frontenac.
Griffith, Catherine Patience; *Jane, Mo.*
Griggeory, Lida Elizabeth; Scammon.
Grim, Kathryn E.; Olathe.
Guinn, Mrs. Mildred Agnes; Galena.

FRESHMEN—*Continued.*

Gum, Mrs. Cleora; *Rocky Comfort, Mo.*
Guntle, Edith Fern; Oswego.
Hafel, C. P.; Caney.
Haggard, Grace; Longton.
Hall, Mattie; Pittsburg.
Hall, Nellie M.; Arma.
Ham, Luther D.; Atchison.
Ham, Opal Mae; Cedar Vale.
Hamby, Anna Olena; *Nevada, Mo.*
Hamilton, Clara Pearl; *Siloam Springs, Ark.*
Hamilton, Janet; Girard.
Hamilton, Louise; Weir.
Hamilton, Opal M.; Independence.
Hammers, Mildred Laura; Scammon.
Hand, Mrs. J. H.; Pittsburg.
Handley, Helen Frances; Oswego.
Hans, Helen Arline; Great Bend.
Hanson, Helen Siverene; Mineral.
Harbert; Allie Sherman; Altoona.
Harclerode, Mary Evadean; Bronson.
Hardy, Hazel Helen; Mound Valley.
Hare, Bertha May; Fort Scott.
Hare, Mamie Estella; Fort Scott.
Hargis, Margaret M.; *Joplin, Mo.*
Hargis, Mildred; *Joplin, Mo.*
Harmon, Ismay Caroline, Pawnee Station.
Harmon, Lucy; *Richards, Mo.*
Harpole, Mae; *Wagoner, Okla.*
Harrigan, Evelyn M.; Scammon.
Harris, Asa Homer; Rosedale.
Harris, Emma Mabel; Coffeyville.
Harris, George; *Kansas City, Mo.*
Hathaway, Irma Rilla; Pittsburg.
Havens, Nellie Maude; *Joplin, Mo.*
Hawk, Cora Almeda; Pittsburg.
Hawks, Charles Ernest; Pittsburg.
Hawley, Merle Ruby; Galena.
Hawley, Orrin Ernest; *Keokuk, Iowa.*
Head, Inez L.; Altoona.
Head, Virda Mae; Altoona.
Heckethorn, Mabel; McPherson.
Hedrick, Alma Odessa; Liberty.
Heilman, Helen Marguerite; Pittsburg.
Heinricksmeier, Delone Delores; Columbus.
Heintzman, Sister Benedict; Paola.
Heisey, Ruth Christine; Galesburg.
Heller, George W.; Croweburg.
Helm, Florence; *Joplin, Mo.*
Henderson, John Carl; *Minneapolis, Minn.*
Hendrickson, Frances Juanita; Pittsburg.
Henley, Ursula C.; Olathe.
Henrickson, Aino Elma; Pleasanton.
Henry, Eula Theodosia; Labette.
Henry, Sofie Madella; Labette.
Henshaw, Carrie Alice; Mound Valley.
Henshaw, Mabel Frances; Mound Valley.
Herrmann, Lena Mae; Arcadia.
Herron, Mabel E.; Radley.
Heryford, Myrtle; McCune.
Hiett, Victor Chester; Nickerson.
Higginbottom, Florence Fern; New Albany.
Higgins, Ellen Josephine; Pittsburg.
Hite, Elsie Louise; Bayard.
Hoag, Lona Gertrude; Pleasanton.
Hockaday, Betty L.; *Rich Hill, Mo.*
Hogelin, Mrs. Dema Savage, Mound Valley.
Holden, Fred Samuel; Pittsburg.
Hollet, Berneta M.; Cherryvale.
Holley, Hazel Leohlia; Oswego.
Holmes, Leora Daisy; Olathe.
Holzer, Thelma Louise; Pittsburg.
Hoover, Winifred Katherine; Westmoreland.
Hope, Mary Beth; Pittsburg.
Hornbuckle, Mable; Pittsburg.
Horton, Elsie Melvina; Chetopa.
Houck, Eula Ethel; Altamont.
Houck, Myrrl Martha; El Dorado.
Houser, Arthur L.; *Stella, Mo.*
Howard, Lyta Verle; Baxter Springs.
Howard, Nettie Caroline; *Goodman, Mo.*
Howell, Donna Dee; Labette.
Howell, Lillie Jean; Caney.
Howerton, Ethel; Chanute.
Hudson, Elva Isabelle; Arma.
Hudson, Lola Faye; Arma.
Huff, Ruby Lucille; Savonburg.
Huffman, Harold Clarence; Pittsburg.
Huffman, Myrtle Marion; Sedan.
Hughes, Eddie Eunice; Olathe.
Hughes, Katherine Frances; Scammon.
Hugo, Mabel Dorothy; Walnut.
Hull, Frances Purla; Pittsburg.
Humphrey, Helen Elizabeth; Baxter Spgs.
Hunsaker, Hazel Irene; Arma.
Hunter, Martha Mae; Anthony.
Hurt, Martha Elizabeth; Columbus.
Husted, Orval Chester; Horton.
Huston, Lorene Almeda; Altamont.
Hutchinson, Nora Marie; Arma.
Ion, Frances Lillian; Turley.
Inviolate, Sister M.; Great Bend.
Jackson, Mrs. Elsie; Pittsburg.
Jackson, Laura Elizabeth; Elsmore.
Jackson, Minnie Dayle; La Harpe.
Jackson, Viola Mae; Kansas City.
James, Bessie Lee; Pittsburg.
Janes, Hazel Lee; Farlington.
Janes, Sybil Lucille; Pittsburg.
Jenkins, Harry Earl; Mulberry.
Jennings, Adelaide Irene; Girard.
Jernigan, Olive; Osage City.
Jerrick, Theresa Marguerite; Goddard.
Johnson, Carlton Clinton; Chetopa.
Johnson, Clifford Rollie; Fort Scott.
Johnson, Florence Frances; Coffeyville.
Johnson, Mamie Ione; Fort Scott.
Johnson, Rachel Alfreda; Savonburg.
Johnson, Mrs. Samuel Bennett; Oketo.
Johnson, Wilma; La Harpe.
Johnston, Loma Augusta; Wauneta.
Johnston, Paul Ernest; Arcadia.
Jones, Earl Robert; Pittsburg.
Jones, Ethel Leah; Moline.
Jones, Gladys Hope; Moline.
Jones, Margarette Dott; Mound City.
Jordan, Minnie Manila; Rantoul.
Joseph, Sister John; Wichita.
Justice, Mildred Claire; Chetopa.
Kannarr, Bessie Edith; Fall River.
Karlesknit, Matthew Thomas; Fort Scott.
Kaufman, Esther E.; Hillsboro.
Kaylor, Dollie Mae; Mulberry.
Keating, Helen; Fort Scott.
Keating, Pauline; Fulton.
Kellam, Mary Anna; Hutchinson.
Keller, Mary Louise; Girard.
Kelso, Alice Isabelle; McCune.
Kempf, Carl Charles; *Purcell, Mo.*
Kennedy, Inez May; Walnut.
Kennedy, Leora Faye; Buffalo.
Kennedy, Marie Lucille; Girard.
Kenney, Katherine Anna; Morehead.
Kenney, Mary Helen; Mound City.
Kentch, Abbie Elizabeth; Olathe.
Ketchum, Blanche; Columbus.
Killough, Elsie Louise; Pittsburg.
Killough, Mrs. Mary E.; Pittsburg.
Kinahan, Ann Pauline; Lenox.
Kincaid, Cecil Walter; Pittsburg.
King, Frankie; Coffeyville.
Knoefel, Agnes Sophia; Pittsburg.
Knox, Effie Leora; Chetopa.
Koenig, Ray Lawrence; Paola.

FRESHMEN—*Continued.*

Kohler, Frances Mae; Coffeyville.
Kohler, Ona Florine; Olathe.
Koppa, Gracie Marie; Girard.
Krog, Anna Gertrude; Girard.
Kutz, Ruth; Parsons.
Kyger, Ada Mabel; McCune.
Lager, Edith Maria; Pittsburg.
Lain, Charles Otto; Parsons.
Lamb, Mrs. Susan; *Joplin, Mo.*
Lambdin, Helen Dorothy; Savonburg.
Lamborne, Gladys S.; Pittsburg.
Lamphiear, Kate Elizabeth; *Elbert, Colo.*
Lamson, Floyd Lowell; Girard.
Lancaster, Mrs. Josephine; *Joplin, Mo.*
Landers, Leafie; Girard.
Lane, Laura Brown; Coffeyville.
Lane, Marian Gertrude; Coffeyville.
Lane, Troy Clifford; Pittsburg.
Laney; Lorene Niles; Pittsburg.
Laney, Maude Elizabeth; Pittsburg.
Lange, Myra Sibble; *Alliance, Neb.*
Lanning, Evelyn Anna; Scammon.
Largent, Christel Pearl; *Jane, Mo.*
Lasley, Etha; Olathe.
Lasley, Gladys Pearl; *Liberal, Mo.*
Laughlin, Anna May; Cherryvale.
Lavender, Minnie May; Altamont.
Lavery, Joseph Edward; Frontenac.
Lawson, Mary Elizabeth; *Alba, Mo.*
Layton, Maytie C.; Chetopa.
Leach, Elizabeth Caroline; Princeton.
Lee, Edith M.; Galena.
Lee, Mary Marie; Gardner.
Lenox, Sarah Emma; Parsons.
Leonard, Mona B.; Cedar Vale.
Leslie, Nell; Appleton City.
Lewis, Ary Lillie; Cherryvale.
Lewis, E. Marie; Opolis.
Lewis, Grace; Girard.
Lill, Grace; Leon.
Lill, Margaret; Leon.
Lindburg, Ellen Matilda; Osage City.
Lindburg, Linda Marie; Osage City.
Lindsay, Dorothy Jean; Girard.
Link, Adah Jane; Roseland.
Livingston, Alice; Edna.
Lloyd, Thelma Frances; Pittsburg.
Logan, Mary Riordan; Franklin.
Long, Lorena Elma; Edna.
Longstaff, Anna; Scammon.
Loomis, Alice Clarene; Rexford.
Loomis, Lucy Frances; Galena.
Loveless, Esther Belton; Topeka.
Lowe, Edith; *Webb City, Mo.*
Lowe; Fannie A.; Coffeyville.
Lowe, Lyllis Theodosea; Paola.
Lowrance, Dorothy Violet; Thayer.
Ludlow, Ethel B.; Pittsburg.
Lundine, Evelyn Amelia; Chanute.
Lyman, Laura Belle; Fairview.
Lynch, Mrs. L. D.; Neodesha.
Lynn, D. Delphine; Neosho Falls.
Lyon, Mabel Edith; Fredonia.
Lyons, Elizabeth Veronica; Pittsburg.
McAlexander, Besse Frances; Ashland.
McAlexander, Grace Irene; Ashland.
McAnnally, Rena; Arma.
McCall, Ruth Edith; Columbus.
McCarthy, Mary Cecilia; Parsons.
McCarthy, Sister M. Isabel; Pittsburg.
McCartney, L. Glee; *Neosho, Mo.*
McCarty, J. Fred; Parker.
McCleary, Gladys Rae; Mulberry.
McCormick, Anna; Chanute.
McCracken, Florence Edna;
  Pawnee Station.
McCray, Bonnie: Chautauqua.
McCullough, Fay; Columbus.
McDill, Helen Louise; Mound City.
McFarland, Ivan Cooper; *Liberal, Mo.*
McFarland, Marjorie Hazel; *Liberal, Mo.*
McGie, Gertrude Estella; La Harpe.
McGinnis, Alice Maybelle; Fall River.
McGinnis, Genevieve Isabelle; Fall River.
McGonigle, Faye; Pittsburg.
McGown, John; McCune.
McKee, Lizzie; *Guthrie, Okla.*
McKnight, Myrtle Bernice; Parsons.
McManamna, Ted L.; Mulberry.
McMeen, Ruth; Coffeyville.
McNally, James E.; *Joplin, Mo.*
McNally, Mary; Independence.
McQuiod, Frances Althea; Colony.
Maffett, L. Blanche; Fulton.
Magers, Dorothy Mildred; La Cygne.
Mahan, Effie Floreine; Fort Scott.
Malone, Archie Daniel; Coffeyville.
Mannen, Mabel Fae; Fredonia.
Marcum, Lena; El Dorado.
Marie, Sister Angela; Pittsburg.
Markle, Harriett Ferguson; Pittsburg.
Marks, Fern Adell; Columbus.
Marriott, Merle Thelma; Mound Valley.
Marsh, Alma Mary; Neodesha.
Marshall, Lorene; Pittsburg.
Martin, Aida Lee; Farlington.
Martin, Alma Ruth; *Joplin, Mo.*
Martin, Beryhl Howard; Cherryvale.
Martin, Fleda Marie; Weir.
Martin, Lewis Alfred; Neosho Falls.
Mary, Sister Margaret; Dodge City.
Mason, Myra; Colony.
Massey, Marie Fern; La Cygne.
Masten, Anna Mae; Oswego.
Masterson, Cordelia Estella; Manhattan.
Mathes, Ruth D.; Pittsburg.
Mathews, Maud; Chanute.
Matter, Mrs. Emma Ellsworth; Pittsburg.
Matter, Leeman Cecil; Weir.
Matthews, Elva Elizabeth; Eureka.
Matthews, Ora; *Guthrie, Okla.*
May, Faye Fanny; Pittsburg.
Means, Gertrude Marjorie; Chanute.
Meeks, Cora; Independence.
Meinholdt, Elizabeth; Topeka.
Mendenhall, James Edgar; Pittsburg.
Mendenhall, Mary Margaret; La Cygne.
Mendenhall, Mary Mildred; *Greensburg, Ind.*
Merciez, Adelaide G.; Roseland.
Merrifield, Glenn; Sedan.
Mezel, Josye Maude; Mulberry.
Michael, Neita Armintha; Stark.
Michaels, James Clarence; La Cygne.
Michella, Clementine; Frontenac.
Middleton, Zella; Altoona.
Milholland, Pearl Verna; Independence.
Miller, Hazel Dean; Altamont.
Miller, Madeleine Dorcas; Mapleton.
Miller, Mary Ann; Scammon.
Miller, Mary Evangeline; *Fort Worth, Tex.*
Miller, Rachel; Scammon.
Miller, Reuben Franklin; Parsons.
Mitchell, Mary Ann; Cherokee.
Moehn, Anna Kathryne; Coffeyville.
Moeller, Margaret; Galena.
Mogan, Mary Delphine; Frontenac.
Mohler, James Monroe; *Liberal, Mo.*
Monahan, Euphemia Regina; Frontenac.
Montee, Hazel Marie; Pittsburg.
Montee, Ruth Duene; Pittsburg.
Montgomery, Ethel; Cedar Vale.
Montgomery, Mrs. L. C.; Garden City.
Moore, Gladys; Valeda.
Moore, Lena Belle; *Liberal, Mo.*
Moore, Mary Adella; Olathe.

FRESHMEN—*Continued.*

Moore, Maude Honora; Neosho Falls.
Moore, Maude; Arcadia.
Moore, Merle; Gardner.
Moore, Mina June; Valeda.
Moore, Thelma Eugenie; Pittsburg.
More, Opal Mildred; Pittsburg.
Morgan, Aletha Mae; Monmouth.
Morgan, Ivy May; Fort Scott.
Morgan, Ruby; Scammon.
Morris, Charlie J.; *Keokuk, Iowa.*
Morris, Edna May; Bronson.
Morse, Helen; *Neosho, Mo.*
Morton, Evetta Rose; Pittsburg.
Moser, Matilda Caroline; Stilwell.
Moyer, Grace Mildred; Savonburg.
Mullen, Opal Rhe; Moreland.
Multhaup, Willis E.; Girard.
Munson, Eva Marie; Elsmore.
Mustard, Gertrude Esther; McCune.
Mustard, Josephine Flora; McCune.
Nalley, Vera L.; *Neosho, Mo.*
Nation, Seth Austin; Erie.
Neagle, Nelle June; Lansing.
Neal, Eula May; *Linneus, Mo.*
Nelson, Mrs. Adelaide; *Joplin, Mo.*
Nelson, Zella Leigh; Mound Valley.
Nesch, Roland John; Pittsburg.
Neth, Mary Rosa; *Liberty, Mo.*
Neuman, Levera Viola; Winfield.
Nichols, Goldie Avis; Fort Scott.
Nichols, Mayme Elsie; *Carthage, Mo.*
Nickell, Nina Chrystella; *Joplin, Mo.*
Nickson, Wilbur; *Nevada, Mo.*
Nielson, Thelma Arnetta; Pleasanton.
Norrick, Hulda Bell; Parsons.
Norwood, Warren Ross; Columbus.
Nystrom, Laura; *Tulsa, Okla.*
Oak, Pauline Hobson; Kingman.
Oakson, Alice Evelyn; *Collinsville, Okla.*
Oberwortman, Mabel Marie; Chetopa.
O'Connell, Mayme Elizabeth; Pittsburg.
O'Donnell, Sara Cecil; Scammon.
Odam, Edna Katherine; Rosedale.
Oharah, Opal Edna; Uniontown.
Oliver, Ella Thelma; Pittsburg.
Olson, Mildred Josephine; Savonburg.
Opperman, Grace; Pittsburg.
Otterman, Edith Hazel; Mound Valley.
Overpeck, Daisy Dee; Chanute.
Owens, Sister M. Ethelbert; Chanute.
Page, Velma Maxine; Cherokee.
Painter, Ruth Wilson; *Joplin, Mo.*
Palmer, May Fern; Garland.
Parisa, Eva E.; Piper.
Parker, Rilla Leone; La Cygne.
Parkes, Mrs. Mildred; Galena.
Paterson, Hannah; Weir.
Patterson, Emma Julia; Coffeyville.
Peak, Lula May; Walnut.
Pearce, Lola Irene; Galena.
Pearson, LaVenia Isabelle; Cullison.
Peck, Mae Josephine; Arkansas City.
Peery, Hazel Elizabeth; Pittsburg.
Pellett, Mary Gertrude; Fort Scott.
Pember, Mrs. Ethel; Parsons.
Pendleton, Delia Lucile; Havana.
Pentzer, Vashti Bell; Fort Scott.
Pepperdine, Mrs. Flossie; Altamont.
Perkins, Gladys Anna; *Minden, Mo.*
Peterson, Clara Margaret; Weir.
Peterson, Glenn Christopher; Cherokee.
Peterson, Hazel Marie; Girard.
Pfast, Lester R.; *Neosho, Mo.*
Phelps, Arthur Oliver; Chetopa.
Phelps, Kittie; Olathe.
Phillips, Felsia Lee; *Picher, Okla.*
Phillips, Irene Mary; Mulberry.
Phillips, Pauline Mary; Columbus.
Pickens, Marie; Burden.
Pickering, Eva Pauline; Galena.
Pidcock, Mrs. Ethel E.; Newton.
Pilkington, Mary Ethel; Scammon.
Pitts, Ada Mae; Fort Scott.
Pitts, Addie Gladys; Independence.
Plagens, Hertha Maurine; Pittsburg.
Ponsler, Everett; Moran.
Ponsler, Verna Maye; Moran.
Poore, Mary Irene; Centralia.
Porter, Lois Alma; Olathe.
Potter, Martha Lois; Pittsburg.
Potter, Merle Anna; Columbus.
Powell, Edna Elizabeth; Fort Scott.
Preston, Ruth Viva Brock, La Harpe.
Price, Edith Helene; Ford.
Price, Helen Bray; Ford.
Price, Mary; Arma.
Puffingbarger, John P.; Pittsburg.
Quackenbush, Ezra Ray; *Earl, Mo.*
Raleigh, Johnnie Lee; Pittsburg.
Ramsey, Dixie Mayer; *Liberal, Mo.*
Rankin, Christopher Van Rensselaer;
Mt. Hope.
Rankin, Thomas; Pittsburg.
Ransom, Anna Belle; La Harpe.
Ransom, Bernice Juanita; La Harpe.
Redmon, Mrs. Charles; *Webb City, Mo.*
Redmond, Mary Eleanor; Wichita.
Reece, Virgie Maye; Hockerville.
Reeves, Cleo Marie; Walnut.
Reid, Bernice Lenore; Morehead.
Reitz, Flossie Amelia; Gardner.
Rexford, Florence Eudora; Morehead.
Reynolds, Alma Pauline; Cedar Vale.
Reynolds, Edna May; Frontenac.
Richards, Chester Louis; Kansas City.
Ricketts, Reuben Harold; Paola.
Ricksecker, Elvalee Susan; Galena.
Rickman, Thelma; *Picher, Okla.*
Riddle, Mrs. Blanche McMurray; Latham.
Ridley, Jennie Louise; Cherokee.
Ridley, Mary Jane; Cherokee.
Riley, Leola Marie; Savonburg.
Riley, Marguerite; Pittsburg.
Rinehart, Minnie Lucille; Ford.
Rinker, Dottie; Liberty.
Riordan, Catharyne Anne; Pittsburg.
Riordan, Margaret Ann Frances; Pittsburg.
Ritter, Emilie Charlotte; Kansas City.
Robbins, Jackson Harris; Columbus.
Roberts, Dorothea Belle; Pittsburg.
Roberts, James Russell; Colwich.
Roberts, Thelma Lucille; McCune.
Robinson, Joseph E.; Galesburg.
Robinson, William; Lucas.
Rogers, James L.; Pittsburg.
Rogers, Mabel Gertrude; *Carthage, Mo.*
Roland, Dorothy Cicely; Hiattville.
Roller, Beulah Anna; *Richards, Mo.*
Romine, Mrs. Drusilla Ella; Cherryvale.
Rondelli, Joe; Pittsburg.
Rorick, Ruth; Cherryvale.
Roseberry, Bonnie; *Asbury, Mo.*
Roseboom, Florence; Girard.
Ross, Ethel Casleman; Parsons.
Ross, Ethel Grace; Winfield.
Ross, Lowell; Pittsburg.
Ross, Pearl Oleta; Winfield.
Ross, Ruby Vesta; Winfield.
Rost, Carrie Hellen; Sedan.
Rouse, Clyde Spaulding; Pittsburg.
Roweth, Olive Pearl; Uniontown.
Ruble, Melissa Melvina; Great Bend.
Ruddell, Bessie Hortense; *Deerfield, Mo.*
Rumbley, Olive Mae; Chanute.
Runkle, Selma Lovina; Hiattville.
Rush, Helen Chlorene; Mulberry.
Russell, Frank Thomas; Lenexa.
Russell, Marguerite Alberta; Pittsburg.

FRESHMEN—*Continued.*

Ryan, Laura Evelyn; Altoona.
Ryan, Mary Ellen; Fort Scott.
Saccanne, Della; Ringo.
Saccanne, Jennie Judith; Ringo.
Sailors, Eula Maye; Erie.
Sater, Goldie May; Galena.
Satterthwaite, Laura H.; Girard.
Schasteen, Mrs. Kate; Pittsburg.
Schlaeman, Viola Emily; Baxter Springs.
Schooley, Helen Mae; Weir.
Schumann, George Ernest; *Nevada, Mo.*
Schwalb, Minnie; Hockerville.
Scott, Dorotha Gertrude; Thayer.
Scott, Dorothy Mae; Arcadia.
Scott, Julia Violet; Parsons.
Scott, William Alexander; Abilene.
Seagrave, Ina E.; Fort Scott.
Seary, Pansymae; *Joplin, Mo.*
Selden, John Samuel; *Norfolk, Va.*
Shaffer, Marie; Fulton.
Shead, Edith Louisa; Arcadia.
Sheil, Mary Cecilia; Pittsburg.
Sheldon, Beryl May; Cedar Vale.
Shelhorn, Nina Josephine; El Dorado.
Sherwood, Viola May; Coffeyville.
Shields, Edna May; Olathe.
Shipp, Minnie Ethel; Paola.
Shoup, Ethel Lorene; *Minden, Mo.*
Shriver, Mrs. Armitta Mildred; *Pittsfield, Ill.*
Simmons, Dorothy Marie; Fort Scott.
Simmons, Rosa Belle; Fort Scott.
Simon, Bertha; Nevada, Mo.
Simpson, Alma Roy; *Broken Arrow, Okla.*
Sims, Clifford Louis; Fort Scott.
Sinclear, Georgia Florence; Walnut.
Sipes, Gladys; Pittsburg.
Skinner, Bessie Mabel; Galena.
Smith, Alta Mabel; Olathe.
Smith, Annetta Lee; *Sarcoxie, Mo.*
Smith, Arthur P.; *Pineville, Mo.*
Smith, Daisy; *Neosho, Mo.*
Smith, Dorothy Burton; Baxter Springs.
Smith, Edith E.; Hallowell.
Smith, Ethel Belle; Leavenworth.
Smith, Florence Mildred; Pittsburg.
Smith, Inez May; Burden.
Smith, Irene Vernice; Columbus.
Smith, L. Louise; Pittsburg.
Smith, Lela M.; Olathe.
Smith, Mabel Eula; Mound City.
Smith, Minnie Lee; *Pineville, Mo.*
Smith, Opal L.; Pittsburg.
Smith, Rex; Pittsburg.
Smith, Vera Irene; Burden.
Smittle, Gladys C.; Columbus.
Snow, Ruth Agnes; Cherokee.
Snyder, Emma Kathleen; Pittsburg.
Snyder, Inez M.; Parsons.
Soderburg, Helen; Fort Scott.
Soderburg, Hilda; Fort Scott.
South, Edwin Burr; Galena.
Sowder, Mrs. Esther Brown; Galena.
Spangler, Claire Hubert; Pittsburg.
Spencer, Kenneth; Pittsburg.
Spencer, Lois Margaret; La Harpe.
Spencer, Mildred Estelle; La Harpe.
Sperry, Margaret; Ocheltree.
Spriggs, Hazel Eunice; McCune.
Stainbrook, Bert; Mound Valley.
Stalker, Paul Clifford; Pittsburg.
Starliper, Doris Esther; Hepler.
Starrett, Gladys Beryle; Columbus.
Starrett, Hazel Fern; Toronto.
Startup, Netta Laura; Rossville.
Steele, James McDowell; Arcadia.
Steele, Mabel Claire; Chanute.
Steele, Winnie Belle; Toronto.
Stephens, Phyllis Elsie; Walnut.
Sterling, Claude McCoy; Cimarron.
Stevanus, Nellie May; Fulton.
Stevens, Aldah; El Dorado.
Stevens, Frances Lucile; Frontenac.
Stevens, Louise Agassiz; Frontenac.
Stewart, Adeline Estella; Birmingham.
Stewart, Willie Zenobia; *Muskogee, Okla.*
Stilson, Thelma; Galena.
Stomp, Helena Margaret; Garnett.
Stonebraker, Alice Hudson; Pittsburg.
Stoner, Wilda A.; Columbus.
Stoskopf, Helen Louise; Baxter.
Strasser, Lawrence Alfred; Hiattville.
Strong, Helen Amelia; Pittsburg.
Strosnider, Orville; Pittsburg.
Stuart, Wilma; Pittsburg.
Stump, David; Blue Mound.
Stump, Nellie May; Blue Mound.
Sturgeon, Birdia Viola; Cherryvale.
Sullivan, Gladys Elaine; Oswego.
Sullivan, Lucille Margaret; Erie.
Summers, Jewell Romaine; *Douthat, Okla.*
Sutton, Mrs. Emma; *Oronogo, Mo.*
Swain, Gladys; *Collinsville, Okla.*
Swain, Sadie Ruth; Soldier.
Swain, Viola May; Iola.
Sweeney, Pearl Cecelia; Pittsburg.
Swigart, Leta Oral; Girard.
Swisher, Violet Leroyette; *Collinsville, Okla.*
Swope, Helen Paige; Morehead.
Tagne, Golda Pearl; Hutchinson.
Tagne, Viola Lucy; Hutchinson.
Tanksley, Margaret Jane; Elk City.
Tanner, Homer Andrew; Cherryvale.
Tanquary, Jennie Esther; Chanute.
Tarkington, Brosia Amy; Altamont.
Tarter, Lena Ellen; Mineral.
Taylor, Margaret Ethel; Fort Scott.
Taylor, Mildred Maybell; Nicodemus.
Taylor, Ted R.; Arcadia.
Tedlock, Meda Elizabeth; Columbus.
Tefft, Mattie Anstice; Humboldt.
Tharp, Florence Veva; Jefferson.
Tharp, Ruth Abigail; Cherokee.
Thery, Alice Leona; Frontenac.
Thomas, Irene Eizabeth; Pittsburg.
Thomas, Opal Marie; Pittsburg.
Thomison, Ruby Mildred; Little River.
Thompson, Lela Mae; Dennis.
Thompson, Lulu Frances; Girard.
Thompson, Mabel E.; Dennis.
Thompson, Margaret; Thayer.
Tipton, Ruth Louise; Girard.
Todd, Edith Ianthe; Coffeyville.
Todd, Marie Inez; Independence.
Tolle F. Moree; Gas City.
Torbett, Elizabeth Veronica; Arma.
Torrance, Mary; Independence.
Townsend, Lena E.; Girard.
Trauel, Fern Lemon; La Cygne.
Traylor, Thelma Sunshine; McCune.
Trendle, Katherine Velma; Uniontown.
Trice, Katherine Elizabeth; Pittsburg.
Trinder, Bernard; Parsons.
Tripp, Mrs. Eleanor L.; Fort Scott.
Trodgon, Alta; Arcadia.
Turley, Eldred Thelma; Columbus.
Turley, Goldie B.; Angola.
Turner, Jessie Myrtle; Redfield.
Turrill, Alma Ruth; Weir.
Tyler, Carl Edward; Arcadia.
Umstead, Ruby Elizabeth; Fort Scott.
Upham, Harriett Rebecca; Boicourt.
Upton, Mellie Leah; Galena.
Utz, Rose Alice; Pittsburg.

FRESHMEN—*Concluded.*

Vance, Kate Elaine; Stark.
Van Dusen, Ida M.; Baxter.
Van Duvall, Lettia Beatrice; Bogue.
Van Gastel, Helena; Pittsburg.
Variot, Mary Gabriel; Pittsburg.
Venable, Stella Faye; *Liberal, Mo.*
Vermilya, Lydia Faye; Attica.
Victoria, Sister Mary; Pittsburg.
Villars, Icy B.; El Dorado.
Wackerle, Esther May; Chetopa.
Waddell, Lena; Rosedale.
Wager, Mrs. Margaret; Pittsburg.
Walker, Clarence B.; Chetopa.
Walsh, Mary Ellen; Weir.
Ward, Walter Glen; Silver Lake.
Wasem, Grace Anna; Girard.
Washington, Coneva Ovesta; Weir.
Watkins, Lenorah; Parsons.
Watkins; Marjorie Frances; Pittsburg.
Watson, Bessie; Bronson.
Weaver, Ruby Florence; Grenola.
Webb, Mabel May; Pittsburg.
Webber, Hazel H.; Cherryvale.
Weir, Eva; Pittsburg.
Weiss, Joseph; Bison.
Weith, Josephine Sarah; La Harpe.
Wellington, Florence; Columbus.
Wellmon, Loren E.; Columbus.
Wells, Opal Jane; Baxter.
Welsh, Ruby Berdena; Fort Scott.
Wesley, Frank Elmo; Kansas City.
Wheeler, Imogene Bertha; Chanute.
Whipple, Maude; Hutchinson.
Whisamore, Allen Thomas; Oswego.
Whitehead, Cora; Girard.
Whitehead, Edith Eileen; Girard.
Whitehead, Ethel M.; *Siloam Springs, Ark.*
Whitehead, James; Carona.
Whiteside, Alpha Vesta; Girard.
Whitney, Juanita A.; Cherokee.
Wickware, John Hale; Pittsburg.
Wiley, Mabel Leota; Lowe.
Wilkerson, Hazle Lucile; Cherryvale.
Wilkins, Cleda Catherine; Buffalo.
Wilkins, Ollie; Fort Scott.
Wilkinson, Bernice; Weir.
Willard, Paul Malone; Arcadia.
Willey, Iva Alice; Arcadia.
Williams, Dollie Violet; Ottawa.
Williams, Frances Blue; Pittsburg.
Williams, Frank Illsley; *Seguin, Tex.*
Williams, James G.; Girard.
Williams, Jennie; Arcadia.
Williams, Leo; Pittsburg.
Williams, Rella Elizabeth; Coffeyville.
Williams, Velda Mae; Girard.
Willis, Georgia Blanche; Uniontown.
Wilson, Clara Beaufort; Cherryvale.
Wilson, Eugenia N.; Pittsburg.
Wilson, Eva Irene; Olathe.
Wilson, Inez Augusta; Kansas City.
Wilson, Jessie Lee; Girard.
Wilson, Lenore J.; Independence.
Wilson, Mary Olive; Coffeyville.
Wilson, Myrtle June; Goodrich.
Wilson, Ruth Amanda; Bronson.
Wilson, Vivian Ione; La Harpe.
Wing, Vera Alice; Columbus.
Wingblade, Pearl Florence; Chanute.
Winter, Emma; Fort Scott.
Withers, Tressia May; Mulberry.
Witter, Clyde F.; *Asbury, Mo.*
Wohlgemuth, Katherine; *Collinsville, Okla.*
Wollen, Lloyd Perry; Garnett.
Woodbury, Adaline Waldera; Pittsburg.
Woodbury, Harry Eugene; Pittsburg.
Woodbury, Robert Arthur; Pittsburg.
Woods, Joyce Marie; Baxter.
Woods, Margaret; Pittsburg.
Wortman, Edith May; *Commerce, Okla.*
Wulf, Emma Anne; Bartlett.
Wyman, Euladell; Pittsburg.
Wyman, Virginia Lavon; Pittsburg.
York, George Andrew; *Pineville, Mo.*
Yost, Hugh Ward; Republic.
Young, Edna Josephine; Pittsburg.
Young, Mrs. Lulu M.; Walnut.
Ziegler, Helen Louise; Pleasanton.
Zimmerman, Gladys Lucile; Olathe.
Zimmerman, Harold H.; Stilwell.
Zook, Harvey Franklin; Galena.

SPECIALS.

Allen, Anna; Fort Scott.
Angel, Ethel; West Mineral.
Attkisson, Alta Edna; Hepler.
Barnett, Sadie Eleanor; Fulton.
Barr, Marie Alene; Cherokee.
Bass, Mary Alice; Farlington.
Beadle, Mary Edna; Franklin.
Bennett, Guy Arnold; *West Plains, Mo.*
Bradbury, Pearl; Bartlett.
Braxton, James Thomas; Kansas City.
Brown, Anna R.; Pittsburg.
Clodfelter, Susan Jane; Hutchinson.
Craig, Mrs. Santa Maria; Fort Scott.
Crawford, Mattie K.; *Sapulpa, Okla.*
Cunningham, Merle; Greeley.
Dana, Helen Elizabeth; Gardner.
Davenport, Mrs. Nettie M.; *Joplin, Mo.*
Denison, Nellie Mae; *Neosho, Mo.*
Dewey, Lillian May; Pittsburg.
Dobrovolny, Dora; Pittsburg.
Dubus, Angela; Arma.
Duling, Mary Agnes; Walnut.
Eesa, Sister M. Mel; Pittsburg.
Ellsworth, Jennie Maud; Mound City.
Ewing, Lucille; Olathe.
Fitzpatrick, Sister M. Ignatius; Paola.
Fox, Doris May; Mulberry.
Graves, Mrs. W. H.; Pittsburg.
Hackett, Sister Mary Edmund; Pittsburg.
Harmon, Bryan Milton; Girard.
Harrington, Louise F.; Haddam.
Havens, Mrs. Rose; Neodesha.
Hennessy, Agnes Lucille; Fulton.
Hess, Kathleen Garnet; Hutchinson.
Ivy, Ruth Valeria; *Batesville, Ark.*
Jackson, Marie; Kansas City.
Jones, Bessie Boyer; Sedan.
Kaufman, Mildred; *Joplin, Mo.*
Knight, Eunice; Pittsburg.
Knoll, Veda L.; Severy.
Lucas, Pearl Macy; Columbus.
McCandless, Lizzie B.; Hutchinson.
Mantooth, Sylvia Arletta; Scammon.
Marcum, Chlorie; Oil Hill.
Martin, Mrs. M. R.; Chanute.
Mathena, Maude Mae; Weskan.
Montgomery, Anna Winona; Oswego.
Morgan, Agnes; Pittsburg.
Moulton, Elizabeth; *Providence, R. I.*
Needham, James E.; Cherokee.
Neff, John B.; *Nevada, Mo.*
Nelson, Glenn Oscar; Arcadia.
Nesbitt, Leafy Jane; Mapleton.
Orr, Eva Marie; Olathe.
Payne, Lillian Della; Rosedale.
Plagens, Elbe Melbaline; Pittsburg.

SPECIALS—*Concluded.*

Plumb, Mrs. W. T.; Pittsburg.
Prescott, Elizabeth; Mound Valley.
Pressler, Katherine; Fort Scott.
Richards, Bruce D.; *Carthage, Mo.*
Richner, Mrs. Mada Mary; Pittsburg.
Riordan, Teresa; Pittsburg.
Risk, Inez Lofton; *Apache, Okla.*
Rogers, Mrs. Nannie V.; Pittsburg.
Roller, Ruby May; *Richards, Mo.*
Roper, Merlie Irene; *Joplin, Mo.*
Roscoe, Mrs. H. L.; Pittsburg.
Ross, Mrs. George G.; Hutchinson.
Rowe, Harriett; Kansas City.
Ruff, Charles Edward; Lewis.
Russell, Ellis; Spring Hill.
Snyder, Mrs. Clarice P.; Hutchinson.
Starry, Mrs. Clarke; Coffeyville.
Stevens, Omar Pasha; Frontenac.
Stewart, Minnie Emma; Devon.
Stiles, Kate; *Washington, D. C.*
Stockinger, Joe; Frontenac.
Stoft, Arthur Edwin; Pittsburg.
Swaizey, Dollie; Coffeyville.
Thayer, Oscar Albert; Altoona.
Tome, Viola Josephine; Pittsburg.
Underwood, Edith; *Carthage, Mo.*
Walker, James Oliver; Columbus.
Warner, Sister Mary Geraldine; Independence.
West, William Jefferson; Pleasanton.
Wintermote, Mary Magdalene; Cherryvale.

Students in Department of Music.

Akey, Mrs. McKinley; Pittsburg.
Akins, Pauline Lavetta; Pittsburg.
Allen, Helen Inez; Pittsburg.
Allen, Stella Mary; Pittsburg.
Allison, Avis Maude; Pittsburg.
Allison, Naoma; Chanute.
Andrews, Mary E.; Pittsburg.
Antoinette, Sister M.; Pittsburg.
Atkins, Irene Gladys; Pittsburg.
Baldwin, Lillian W.; *Carterville, Mo.*
Barani, Sarah M.; Pittsburg.
Barnthouse, Ethel Angel; Pittsburg.
Baxter, Esther Correcta; Pittsburg.
Beasley, Lynette; Pittsburg.
Beck, William Leslie; Osawatomie.
Behmer, Melba L. Maxine; Hamilton.
Beltram, Johnnie; Carona.
Benefiel, James H.; Coffeyville.
Bennett, Clelia Alice; Pittsburg.
Bernhardt, Ethelyn; Pittsburg.
Billings, Edith Kathryn; Pittsburg.
Gitner, Robert; Pittsburg.
Bollinger, Marie; Mound Valley.
Borders, Dannie May; Weir.
Bothwell, Bonita Mae; Pittsburg.
Bowker, Vivienne Eileen; Pittsburg.
Bradshaw, Anna Mae; Chanute.
Brandenburg, Merrill Francis; Pittsburg.
Brandenburg, William A., Jr.; Pittsburg.
Branham, Sarah Amanda; Pittsburg.
Brenner, Mary Ellen; Pittsburg.
Burroughs, Marion Guyndine; Cherokee.
Briggs, Lucile; Pittsburg.
Brown, Lottie Imogene; Junction City.
Brunk, Florence Helena; Dodge City.
Bruno, Mary Helen; West Mineral.
Butler, Lawrence Eugene; Coffeyville.
Buvinger, Blanche Ailene; Chetopa.
Byer, David; Pittsburg.
Byer, Hilda; Pittsburg.
Byer, Jennie; Pittsburg.
Byer, Sophia; Pittsburg.
Caffey, Marguerite Winn; Pittsburg.
Caffey, Elizabeth; Pittsburg.
Campbell, Elsie; *Rich Hill, Mo.*
Campbell, Lota Lucile; Pittsburg.
Capps, Cleta Fredonia; Pittsburg.
Carrier, Emile Nicholas; Frontenac.
Carter, Cecile Wanda; Pittsburg.
Cecil, Neva Grace; Mound Valley.
Cheesman, Marjorie Mozella; Parsons.
Chitwood, Josephine Lucile; *Carl Junction, Mo.*
Claiborne, Mrs. R. O.; Pittsburg.
Cloyd, Edith, Pittsburg.
Colborn, Edith Mary; Pittsburg.
Colborn, Laura; Pittsburg.
Coleman, William Harold; *Asbury, Mo.*
Congdon, Mildred; *Kansas City, Mo.*
Connet, Bernice Vivian; Pittsburg.
Connet, Vena Carrie; Pittsburg.
Copeland, Julia Ellen; Girard.
Cook, John M.; Independence.
Cornelius, Elizabeth Tusten; Pittsburg.
Cornish, Hester Mae; Cheney.
Cotter, Beatrice; Pittsburg.
Coulter, Celia Irene; Pittsburg.
Covey, Agnes Louise; Baxter Springs.
Crelly, Margaret Helen; Pittsburg.
Crow, Agnes; Pittsburg.
Cunningham, Charles Raymond; Englevale.
Curry, Clorinne Rosalee; Pittsburg.
Cutburth, Macy Jean; Pittsburg.
Daniel, Helen Eloise; *Catlettsburg, Ky.*
Davis, Cliffine Mary; Pittsburg.
Davis, Velma Lee; Pittsburg.
Degen, Marjorie Reba; Pittsburg.
Dellenger, Mary Catherine; Pittsburg.
Descamp, Edrea Juliette; Pittsburg.
Dickey, Helen; Pittsburg.
Dickey, Margaret Maurine; Pittsburg.
Dismukes, Beatrix Correne; Pittsburg.
Dollard, Virgie May; Attica.
Donahey, Helen Shirley; Pittsburg.
Doring, Gertrude; Pittsburg.
Doughman, Marguerite; Parsons.
Dragoo, Claire; Pittsburg.
Edwards, Dean Royster; Pittsburg.
Egger, Lucy Juliene; West Mineral.
Elliott, Ruth Helen; Arma.
Elsing, Bernice Ethel; Pittsburg.
Emmons, Irene Lou; Pittsburg.
Fehrenbach, Josephine Mary; *Joplin, Mo.*
Fisher, Lydia Anne; *Jefferson City, Mo.*
Fisher, Mabel; Weir.
Flatt, Mabel Beulah; Pittsburg.
Foresman, Helen Elizabeth; Pittsburg.
Foresman, Mary Margaret; Pittsburg.
Forsyth, Floyd; Pittsburg.
Forsyth, Rudolph; Pittsburg.
Frain, Wilma Frances; Pittsburg.
Frank, Regina Kathryn; *Bellingham, Wash.*
Frolich, Adrea Regina; Pittsburg.
Frolich, Rosalia Margaret; Pittsburg.
Geeder, Katherine Gibson; Pittsburg.
Gerkin, Georgene Leigh; Girard.
Gieselman, Eunice Clare; Pittsburg.
Gorrell, Juanita; Pittsburg.
Graham, Staneart; Pittsburg.
Graves, Coke Bernard; Pittsburg.
Gray, Maud Lavon; Pittsburg.
Green, Dency; Pittsburg.
Green, Opal; Pittsburg.
Grotheer, Ruth M.; Pittsburg.
Gunsaullus, Edna May; Fort Scott.
Gyles, Advm Maude; Pittsburg.
Hamner, Lois Allene; Pittsburg.
Hargis, Margaret M.; *Joplin, Mo.*

DEPARTMENT OF MUSIC—*Concluded.*

Hargis, Vetra Virginia; Pittsburg.
Harpole, Mae; *Wagner, Okla.*
Heaton, Helen Louise; Pittsburg.
Henrietta, Sister M.; Pittsburg.
Henshaw, Carrie Alice; Mound Valley.
Herron, Mary Frances; Sterling.
Hisle, Jessie Maurine; Pittsburg.
Hobson, Ida Ruth; Pittsburg.
Hockaday, Betty L.; *Rich Hill, Mo.*
Holzer, Thelma Louise; Pittsburg.
Horton, Mildred Frances; Pittsburg.
Hromek, Agnes; Frontenac.
Huffman, Clarice D.; Hepler.
Hutchinson, Hallie Mae; Pittsburg.
Hutchinson, Ruth Lacey; Pittsburg.
Johnson, Inez L.; Weir.
Johnson, Letha Myrtle; *Asbury, Mo.*
Jones, J. Lawrence; Pittsburg.
Jones, Marguerite Lillian; Pittsburg.
Jones, Paul; Pittsburg.
Jones, Pauline; Pittsburg.
Jones, Raymond; Pittsburg.
Jones, Ruth Gibson; Pittsburg.
Kidder, Maurice Arthur; Pittsburg.
King, Edith Julia; Pittsburg.
Korb, Adalyne Marguerite; Pittsburg.
Korb, Otto Pauline; Pittsburg.
Lambert, Margaret; Pittsburg.
Lanyon, Mrs. Maurice; Pittsburg.
Locke, Madge M.; Pittsburg.
Lough, Delma Dee; Pittsburg.
Lough, Velma Ree; Pittsburg.
Lough, Vivian Beatrice; Pittsburg.
Lucas, Alma Joann; Pittsburg.
Luckey, Juanita; Pittsburg.
Lyman, Laura Belle; Fairview.
Lynch, Gwen Marie; Neodesha.
McCleary, Hazel Alphonzine, Pittsburg.
McCray, Bonnie; Chautauqua.
McCulloch, Ferne Jennie; Pittsburg.
McGonigle, Zoe; Pittsburg.
Margrave, Ruth; Pittsburg.
Marsh, Flora Jeannette; Pittsburg.
Matches, Fern Cleone; Pittsburg.
Mawson, Martha Nina; Pittsburg.
Meagher, Marguerite; Quenemo.
Melvin, Doris; Pittsburg.
Metcalf, Patti Elsa; Colony.
Mendenhall, Ethelyn; Pittsburg.
Milleson, Sybil Lee; Pittsburg.
Milleson, Dona Ruth; Pittsburg.
Millington, Floy Le Baron; Pittsburg.
Miner, Maxine; Pittsburg.
Mitchell, Margaret Olive; Pittsburg.
Moherman, Laura F. C. B.; Wellsville.
Montgomery, Mrs. Sadie K.; Fort Scott.
Montgomery, Willie Mae; *Muskogee, Okla.*
More, Opal Mildred; Pittsburg.
Morgan, Agnes Leona; Arma.
Morgan, Dorothy Lavon; Arma.
Myers, Hattie Esther; Pittsburg.
Neibarger, Clyde; Topeka.
Newman, Alma; Pittsburg.
Newman, Clara; Pittsburg.
Nichols, Merle; Pittsburg.
Nipple, Florence Marie; Mulberry.
Olsen, Lucia Adelaide; Pittsburg.
O'Neall, Beatrice Carolton; *Carthage, Mo.*
Ott, Mary Marcella; Pittsburg.
Owen, Edna Anna; *Carl Junction, Mo.*
Palmer, Maurine; Pittsburg.
Papesh, Mary Anna; Frontenac.
Parker, Sam D.; Pittsburg.
Perrine, Vivian; *Siloam Springs, Ark.*
Plumb, Mrs. W. T.; Pittsburg.
Phillips, Edith; Girard.
Potter, Veva; Pittsburg.
Price, Helen Bray; Ford.
Reid, Irene; Pittsburg.
Ricketts, Reuben Harold; Paola.
Robertson, Hortense Effie; Pittsburg.
Roberts, Richard H.; Winfield.
Roby, Sarah Darlene; Pittsburg.
Rogers, Fred Cave; Pittsburg.
Rogers, James L.; Pittsburg.
Rogers, Martha; Pittsburg.
Rumbley, Olive Mae; Chanute.
Rummel, Dorothy Ida; Parsons.
Russell, Mary Frances; Stafford.
Russell, William Walter; Pittsburg.
Ryan, Richard Morgan; Pittsburg.
Schasteen, Bessie; Pittsburg.
Schiefelbein, Minnie; Pittsburg.
Schirk, Maude Ellen; Pittsburg.
Schmidt, Erma Adelade; Pittsburg.
Schumann, George Ernest; *Nevada, Mo.*
Scott, Margaret Eloise; Pittsburg.
Scott, Ruth Geneva; Pittsburg.
Sell, Francis Xrarious; Pittsburg.
Sell, Paul; Pittsburg.
Seymour, Kathleen; Kansas City.
Shepard, Genevieve; Columbus.
Skourup, Mildred Irene; Pittsburg.
Small, Vivian V.; Ford.
Smiley, Helena; *Manzonola, Colo.*
Smith, Mrs. Charles; Pittsburg.
Smith, Helene Edmunds; Chetopa.
Smith, L. Louise; Pittsburg.
Smith, Opal L.; Pittsburg.
Smith, Sidney Joseph; Pittsburg.
Sperry, Margaret; Ocheltree.
Spragg, Thelma Marcella; Pittsburg.
Stamm, Ruth; Pittsburg.
Stelle, Elizabeth Elmira; Pittsburg.
Stevison, Vorice Myron; Pittsburg.
Streeter, Mary Edwina; Pittsburg.
Sutton, David; Pittsburg.
Tanner, Lorene Louise; Pittsburg.
Taylor, Katherine; Pittsburg.
Thayer, Joseph Delbitt; Pittsburg.
Theis, Barbara; Pittsburg.
Theis, Cecelia Margaret; Pittsburg.
Thomas, Opal Marie; Pittsburg.
Thorpe, Mrs. Lillian Joyce; Pittsburg.
Thorpe, Robert Bruff; Pittsburg.
Throndson, Keith; Farlington.
Tilton, Ruth Elizabeth; Cherokee.
Timmons, Charlotte Mary; Pittsburg.
Tolle, F. Moree; Gas City.
Triana, Lena; Frontenac.
Trout, Mary; Pittsburg.
Utley, Edna Myrtle; Pittsburg.
Utley, Julia; Pittsburg.
Veatch, Lila; Weir.
Walker, Merle Delbert; Pittsburg.
Walters, Bessie; Scammon.
Wager, Mrs. Margaret; Pittsburg.
Ward, Lewis; Pittsburg.
Weede, Dorothy; Pittsburg.
West, Mrs. C. A.; Pittsburg.
Whittington, Nadine Eva; Pittsburg.
Williams, Billie Wilma; Pittsburg.
Williams, James Green; Girard.
Wilson, Mrs. Luna M.; Pittsburg.
Wimp, Marguerite; Pittsburg.
Wimp, Martha Isabel; Pittsburg.
Wolf, Olga Margaret; Pittsburg.
Wood, Marie Elizabeth; Fort Scott.
Woodbury, Margaret Adele; Pittsburg.
Wright, Mrs. C. W.; Pittsburg.
Wright, Keith F.; Pittsburg.
Wright, Pluma Lou; Pittsburg.
Yartz, Agnes; Frontenac.
Yetzbacher, Mina Wilhelmina; Frontenac.

Senior High School.

SENIOR YEAR.

Abell, Edna Pearl; Ashland.
Alexander, William M.; Pittsburg.
Allen, Helen Inez; Pittsburg.
Allen, May; Pittsburg.
Allyn, Hazel Edythe; Franklin.
Armstrong, Lucy June; Franklin.
Atkins, Irene Gladys; Pittsburg.
Baker, John Meredith; Pittsburg.
Barrett, Love Joy Pauline; Parsons.
Baxter, Esther Correcta; Pittsburg.
Bertino, Agnes; Mulberry.
Biddle, Sadie Margaret; Pittsburg.
Billington, Pauline Bertha; Pittsburg.
Boone, Alice Grace; Pittsburg.
Bowen, James Dowling; Pittsburg.
Bowers, Breta Marguerite; Cherryvale.
Brady, Bessie Louise; Pittsburg.
Brower, Esther Marguerite; Pittsburg.
Carder, Mildred La Rue; Pittsburg.
Chase, Hubert Vance; Pittsburg.
Cogswell, William T.; Pittsburg.
Coleman, William Harold; *Asbury, Mo.*
Cropper, Agnes Nell; Pittsburg.
Cunningham, Charles Raymond; Englevale.
Davis, Lavon Winithe; Pittsburg.
Denney, Cecil A.; Pittsburg.
Dicus, Frank Parron; Edna.
Dilman, Carthena; Pittsburg.
Dobson, Frances J.; Edna.
Downing, John Lester; Pittsburg.
Edwards, Florence Lois; Iola.
Fern, Mary Elizabeth; Scammon.
Fonburg, Alta Fern; Arcadia.
Foresman, Helen Elizabeth; Pittsburg.
Fox, Beatrice Alice; Mulberry.
Geary, Mae; Pittsburg.
Gieselman, Eunice Claire; Pittsburg.
Gillin, Hugh Clair; Pittsburg.
Gillenwaters, J. Marie; Pittsburg.
Graham, Staneart; Pittsburg.
Graves, Goldie Alta; Pittsburg.
Hartman, Fern; McCune.
Hatch, Ida Mae; Girard.
Henderson, Thelma Madelene; Frontenac.
Hosford, Nina Ruth; Frontenac.
Israel, Constance Thelma; Farlington.
Keller, Sam Lyde; Pittsburg.
Killough, Elsie Louise; Pittsburg.
Lance, Mary Alice; Pittsburg.
Limbaugh, Florence Anna; Pittsburg.
Lloyd, Thelma Frances; Pittsburg.
Lyon, Margaret Comelia; Chetopa.
McClure, Letha Marie; Opolis.
McCue, J. Hugh S.; Pittsburg.
McGinnis, Lawson William; Fall River.
Marsh, Flora Jeannette; Pittsburg.
Matthews, Leora; *Guthrie, Okla.*
Mayfield, Beulah Vivian; Chetopa.
Meagher, Marguerite; Quenemo.
Montee, Teddie; Pittsburg.
Molyneux, Vivian; Parsons.
More, Mrs. Nannie B.; Pittsburg.
Nelson, Ellice Claire; Hewins.
Oberwortman, Agnes Emma; Chetopa.
Paterson, Lizzie; Weir.
Rall, Lavon B.; Pittsburg.
Reed, Hannah Leone; Arcadia.
Smith, Cecile; Pittsburg.
Smith, Charlotte Mary; Pittsburg.
Swart, Willard Elmer; Girard.
Talbot, Leah Cecelia; Pittsburg.
Taylor, Camilla; Pittsburg.
Trabue, Martha Augusta; Pittsburg.
Trumbly, Gladys Lillian; Elgin.
Walker, Florinne Marcella; Pittsburg.
Waskey, Helen; Pittsburg.
West, Alice Helene; Columbus.
Wilkerson, Helen Opal; Parsons.
Wilson, LaVon Lee; Pittsburg.
Young, Ester Rose; Pittsburg.

JUNIOR YEAR.

Allen, Manuel Anderson; Pittsburg.
Applegate, Madeline Belle; Gas City.
Bailey, Ruth Imogene; Pittsburg.
Bair, Leona Lillie; Arma.
Besson, Hubert; Pittsburg.
Biddle, John P.; Pittsburg.
Bishop, Armund Helmoth; Mulberry.
Brandstetter, Neil V.; Pittsburg.
Broadlick, Charles Thomas; Pittsburg.
Burchman, Helen Irene; Parsons.
Carder, Carl Clements; Pittsburg.
Carl, Helen; Arma.
Cavanaugh, William Denis; Pittsburg.
Clemens, Bill Lee; Pittsburg.
Collins, Wayne M.; Neodesha.
Connet, Nelson Marvin; Pittsburg.
Covell, Merle Aran; Pittsburg.
Crane, Vera Mae; Altamont.
Cummiskey, Josephine Ambrose; Scammon.
Darling, Ruby Anna; Mound Valley.
Dillaway, Dorothy Daniels; Baxter.
Dobson, Maurine Estelle; Pittsburg.
Doyle, Mary Vivian; McCune.
Duffy, Katherine; Pittsburg.
Dupont, Mary; Mulberry.
Edwards, Dean Royster; Pittsburg.
Fedell, Helen; Pittsburg.
Frohlich, Adrea Regina; Pittsburg.
Gaba, Clover Frances; Baxter Springs.
Garr, Lulu E.; Havana.
Garrett, Clara Belle; Arcadia.
Goodman, Rhea Rowena; Pittsburg.
Gove, Lillian Juanita; *Joplin, Mo.*
Grant, Bessie Marguerite; Pittsburg.
Gray, Ruth Elizabeth; Parsons.
Green, Orval L.; Pittsburg.
Guthridge, Wallace Hunter; Pittsburg.
Hackett, Bessie Annette; Pittsburg.
Hankins, Mary Frances; Iola.
Harshfield, Sidney Clyde; Pittsburg.
Hisey, Charles; Pittsburg.
Hisle, Jessie Maurine; Pittsburg.
Hopper, Eva Irene; Arcadia.
Houston, Glenn Merle; *Carl Junction, Mo.*
Irwin, Ruth; Chanute.
Johnson, Anna Christine; Mound Valley.
Johnson, Kathryn I.; Pittsburg.
Johnson, Mabel Frances; St. Paul.
Johnson, Muriel Marie; St. Paul.
Jones, Austin Leonard; Pittsburg.
Kelso, Lelia Fern; McCune.
Laughlin, Rutherford J.; Pleasanton.
Lough, Vivian Beatrice; Pittsburg.
Loring, Thelma Juanita; Fort Scott.
McClintock, Wilbur Petch; Buffville.
Maletz, Veda Hazel; Pittsburg.
Marsh, Margaret; Gross.
Mathena, Maude Mae; *Dunnegan, Mo.*
Mays, Goldie Fern; Pleasanton.
Mendenhall, Ethelyn; Pittsburg.
Mooniehan, Mamie Eulabell; Arcadia.
Nelson, Essie Jane; Salina.
Nelson, Lester Guy; Weir.
Oliver, Margaret; Pittsburg.

JUNIORS—*Concluded.*

Reinecke, John Ernest; Pittsburg.
Revell, Arthur Joseph; Scammon.
Schlichting, Dora Anna; Pittsburg.
Schreeb, Frances Lorene; Pittsburg.
Scott, Addie Rosella; Weir.
Scott, Mary Katherine; Neodesha.
Scott, Maude Gazelle; Weir.
Shorb, Lucille Elinor, Frontenac.
Sighel, Tracy Josephine; Pittsburg.
Sims, Mary Della; Fulton.
Smalley, Mary Maxine; Parsons.
Smith, Amelia Mayme; Pittsburg.
Smith, Juanita Melvina; Galena.
Spicer, Ura Jane; Pittsburg.
Sutton, Katherine Dittmar; Girard.
Taylor, Mary Elizabeth; Pittsburg.
Taylor, Mildred J.; Iola.
Tedlock, Edith Alburn; Columbus.
Troegler, Emma Gertrude; Pittsburg.
Trout, Ralph Haddon; Pittsburg.
Vance, Kate Elaine; Stark.
Van Gastel, Elizabeth Mary Cathryn; Pittsburg.
Venable, Pearl L.; Mulberry.
Vorhies, Theodore Melvin; Pittsburg.
Ware, Wesley Miles; Pittsburg.
Watson, Nora; Pittsburg.
Weir, Oma Ethel; Pittsburg.
Wilson, William; Pittsburg.

SOPHOMORE YEAR.

Akins, Lavetta Pauline; Pittsburg.
Allen, George David; Pittsburg.
Babcock, Leola Elma; Pittsburg.
Baxter, Earl Victor; Pittsburg.
Beasley, Thelma Fay; Pittsburg.
Bechdolt, Frances Lily; *Asbury, Mo.*
Benton, Roberta Irene; Pittsburg.
Bitner, Arthur Scott; Pittsburg.
Bollings, Mrs. Maggie; Pittsburg.
Brannum, William Blair; Pittsburg.
Brown, Samuel Frederick; Pittsburg.
Burroughs, Marion Guyndine; Cherokee.
Crane, Virgil Byrd; Pittsburg.
Crelly, Margaret Helen; Pittsburg.
Davis, Raymond; Caney.
Davis, Nina; Pittsburg.
Dellenger, Alice Hope; Pittsburg.
Demmon, Grace Lee; Pittsburg.
Demmon, Nellie Leone; Pittsburg.
Eakins, Effie Alberta; Pittsburg.
Edwards, James Francis; Pittsburg.
Elliott, Ruth Helen; Arma.
Ellis, Fred; *Bronaugh, Mo.*
Endicott, Bertha Mae; Pittsburg.
Endicott, Lucy Margaret; Arcadia.
Esch, Alexander; Pittsburg.
Evans, Ellen Mamie; Pittsburg.
Faulkner, Zeddo Z.; Pittsburg.
Fink, Reba Agnes; Pittsburg.
Fitzgibbon, Nora Catherine; Scammon.
Frazier, Willard David; Pittsburg.
George, Aase; Baxter.
Graham, Harry Pomroy; Pittsburg.
Graves, William B.; Pittsburg.
Gregory, Wayland Charles; Pittsburg.
Gruber, Wilma Velma; Pittsburg.
Hall, Miriam Wilda; Pittsburg.
Harris, James Leon; Pittsburg.
Hartman, Opal; McCune.
Heilman, Georgia May; Opolis.
Heilman, Minnie Gertrude; Opolis.
Henderleider, Kenneth C.; Pittsburg.
Henderleider, Martha; Pittsburg.
Hickman, Lola Anne; Mildred.
Hobbs, Alberta Herrick; Walnut.
Hobson; Ida Ruth; Pittsburg.
Hooper, Frederick Homer; Pittsburg.
Hopper, Florence Opal; Arcadia.
Hyink, Harriett Mae; Pittsburg.
Ingram, Dona Alice; Arcadia.
Ingram, Edna Myrtle; Arcadia.
Jackson, Arthur Cecil; Pittsburg.
Jenkins, Cecil Icle; Weir.
Gent, Hattie Elizabeth; Pittsburg.
Johnson, Thelma Felice; Pittsburg.
Jones, Clara Mae; Mulberry.
Keegan, Marguerite Helen; Franklin.
Knoll, Kathryn Alice; Pittsburg.
Kubler, Marie; Pittsburg.
Lance, Mabel Fern; Pittsburg.
Lebecq, Leon Hippolite; Pittsburg.
Lewis, Melvin L.; Opolis.
Luckett, Margaret Dorothy; Pittsburg.
Mason, Margaret; Fulton.
Melletti, Laura Margaret; Pittsburg.
Millikan, Lela Alice; Sedan.
Moberg, Jack Arthur; Pittsburg.
Moeller, Milton; Galena.
Moss, Frank Maxwell; Pittsburg.
Moynihan, Murrel; Pittsburg.
Murphy, Nona Valeria; Girard.
Nolan, Fern Ella; Pittsburg.
Oertle, Edith Evelyn; Opolis.
Pancost, Walter; McPherson.
Park, Howard Wesley; Pittsburg.
Pence, Gladys Mae; Pittsburg.
Richner, Mrs. Mary Mada; Pittsburg.
Robinson, Gertrude Fern; Pittsburg.
Ryan, Edna Mae; Brazilton.
Schneider, Clarence B.; Pittsburg.
Scott, Earl Raymond; Caney.
Seniff, Naomi Mary; Pittsburg.
Shafer, Dorothy Jane; Pittsburg.
Sharp, Helen Carmaleta; Pittsburg.
Sharp, Vaneta Lee; Pittsburg.
Simpson, Gail; Pittsburg.
Smith, Rolland L.; Pittsburg.
Spencer, Earl Anderson; Pittsburg.
Stauffer, Mary Louise; Girard.
Stroud, Vaden Hunley; Garland.
Uhles, Elsie Cecile; Pittsburg.
Venable, Stella Fay; Mulberry.
Wallace, Mary Ruth; Pittsburg.
Walters, Elsie Mae; Pittsburg.
Waskey, Miriam Dean; Pittsburg.
Weare, Hazel Delsie; Pittsburg.
Weir, Goldie May; Pittsburg.
Whitesitt, Ermal Kennedy; Pittsburg.
Wilson, Dorothy Pauline; Pittsburg.
Zucca, Martin; Pittsburg.

Junior High School.

NINTH GRADE.

Baily, Frances Emeline; Pittsburg.
Bennet, Clelia Alice; Pittsburg.
Biddle, Cora Martha; Pittsburg.
Bowers, John Alden; Pittsburg.
Burgess, Oscar Henry; *Asbury, Mo.*
Butler, Lawrence Eugene; Coffeyville.
Byer, Hilda; Pittsburg.
Chimpsky, William Henry; Pittsburg.
Church, Grace Kimbell; Pittsburg.
Coulter, Georgette Lindsay; Pittsburg.
Dainty, Rebecca; Pittsburg.
Demmon, Mellie Leone; Pittsburg.
Denney, Ernestine Eleanor; Pittsburg.
Felton, Frank; Pittsburg.
Felton, Jessie Hazel; Pittsburg.
Gardner, Eric Addie; Pittsburg.
Gudgen, Prentice Everett; Pittsburg.
Hill, Richard Lauren; Pittsburg.
Jackson, Merle Frances; Pittsburg.
Johnson, Loren Raymond; Pittsburg.
Johnson, Olive Lavette; Pittsburg.
Jones, Ruth Gibson; Pittsburg.
Lough, Delma Dee; Pittsburg.
Lough, Velma Ree; Pittsburg.
Luckey, Juanita; Pittsburg.
Markle, Lloyd Francis; Pittsburg.
Marsh, Richard Riley; Pittsburg.
Matthews, Florence Marie; Pittsburg.
Millard, Hubert Andrew; Pittsburg.
Oertle, Alice; Pittsburg.
Pellegrino, Josephine Marie; Pittsburg.
Plagens, George; Pittsburg.
Riegel, Francis; Pittsburg.
Rogers, Martha; Pittsburg.
Schasteen, Bessie; Pittsburg.
Schnarre, Lottie Louise; *Fairland, Okla.*
Schrapper, Florence Rita; Pittsburg.
Scott, Jewell Gladys; Pittsburg.
Scott, Margaret Eloise; Pittsburg.
Seeley, Warren Alfred; Pittsburg.
Seymour, Mildred Emma; Pittsburg.
Spencer, John Galen; Pittsburg.
Stroud, Virginia Elizabeth; Pittsburg.
Taylor, Katherine; Pittsburg.
Thayer, Milton Taylor; Pittsburg.
Trout, Harold Augustus; Pittsburg.
Walls, Evelyn Jane; Opolis.
Weare, Vivian Nadine; Pittsburg.
Weaver, Opal Lee; Pittsburg.
Woodbury, Margaret Adele; Pittsburg.
Wyman, Carl Kenneth; Pittsburg.
Yount, Katherine Emma; Pittsburg.

EIGHTH GRADE.

Baker, George Clifford; Pittsburg.
Benton, Bernice Velda; Pittsburg.
Billington, Gertrude Velma; Pittsburg.
Bowers, Garvey Bruce; Pittsburg.
Brown, Helen Margaret; Pittsburg.
Carlson, Bernard Frederick; Pittsburg.
Colborn, Laura; Pittsburg.
Dellenger, Ralph; Pittsburg.
DeRuy, Norvelle Randle; Pittsburg.
Dickey, Margaret Maurine; Pittsburg.
Foresman, Max Walker; Pittsburg.
Grotheer, Ruth; Pittsburg.
Hobson, Margaret Lorna; Pittsburg.
Hooper, Shirley Nan; Pittsburg.
Houston, Fern Anna; Pittsburg.
Jackson, Alda Mae; Pittsburg.
Janeski, Emma Lena Laura; Pittsburg.
Laughlin, Ralph Alfred; Pittsburg.
Mead, Emily Lorene; Pittsburg.
Mendenhall, Paul Harold; Pittsburg.
Millard, Lucille Dorothy; Pittsburg.
Nichols, Dorothy Emma; Pittsburg.
Olson, Lucia Adelaide; Pittsburg.
Parker, Sam D.; Pittsburg.
Rogers, Fred Cave; Pittsburg.
Shafer, Robert Kettler; Pittsburg.
Shaw, Richard Malburn; Pittsburg.
Sherwood, Alice Lavon; Pittsburg.
Simpson, Clyde Arthur; Pittsburg.
Smith, Sidney Joseph; Pittsburg.
Walker, Merle Delbert; Pittsburg.

SEVENTH GRADE.

Baker, Emeric Temple Meredith; Pittsburg.
Barani, Rolli; Pittsburg.
Berry, Pauline Eunice; Pittsburg.
Biddle, Louise Mae; Pittsburg.
Brandenburg, Helen; Pittsburg.
Brandenburg, William A., jr.; Pittsburg.
Colburn, Edith Mary; Pittsburg.
Davies, Jane Gibb; Pittsburg.
Devaney, Opal Ruth; Pittsburg.
Draper, George Everett; Pittsburg.
Dunwell, Davette Lottie; Pittsburg.
Dunwell, Gertrude Mary; Pittsburg.
Freeman, Margaret Helen; Pittsburg.
Graver, Laurette May; Pittsburg.
Green, Dency; Pittsburg.
Hobson, Marcet; Pittsburg.
Hoffman, Carl William; Pittsburg.
Howe, Ray Gibb; Pittsburg.
Howe, Robert Gibb; Pittsburg.
Jones, Raymond; Pittsburg.
Markle, Fergus; Pittsburg.
Michel, Beulah; Pittsburg.
More, Nadine Rebah; Pittsburg.
Ockerman, Pauline Margaret; Pittsburg.
Richards, Nina; Pittsburg.
Steffens, Charles F.; Pittsburg.
Webb, Edward; Pittsburg.

Training School.

Aikins, Rosamond; Pittsburg.
Albers, Genevieve; Pittsburg.
Aldin, Bessie; Pittsburg.
Aldrich, Cecil; Pittsburg.
Allen, Lucille; Pittsburg.
Armstrong, David; Pittsburg.
Aubert; Chleice; Pittsburg.
Baade, Louise Ernestine; Pittsburg.
Baker, Fred; Pittsburg.
Baxter, Maurice; Pittsburg.
Beasley, David; Pittsburg.
Beasley, Lynette; Pittsburg.
Beasley, Warren; Pittsburg.
Beiser, Jay; Pittsburg.
Berani, Loren; Pittsburg.
Bidderman, Eugene; Pittsburg.

TRAINING SCHOOL—*Continued.*

Biddle, Edith; Pittsburg.
Biddle, Elizabeth; Pittsburg.
Biddle, Louise; Pittsburg.
Biddle, Roger; Pittsburg.
Bitner, Robert; Pittsburg.
Bitner, Winona; Pittsburg.
Black, Clyde; Pittsburg.
Boyce, Mary Louise; Pittsburg.
Branham, Sarah Amanda; Pittsburg.
Briggs, Lucille; Pittsburg.
Broadhurst, Irene; Pittsburg.
Caffey, Elizabeth; Pittsburg.
Callery, Anabel; Pittsburg.
Cappers, Birdie Fay; Pittsburg.
Carey, Lorene; Pittsburg.
Carolyn, Lemoine; Pittsburg.
Chapman, Gladys; Pittsburg.
Cherblanc, Adrian; Pittsburg.
Cheyne, Edith; Pittsburg.
Colgrove, Ruth; Pittsburg.
Cooper, Dale; Pittsburg.
Cooper, Evelyn; Pittsburg.
Covell, Verne; Pittsburg.
Crelley, Eleanor; Pittsburg.
Cruse, Dorothy Ann; Pittsburg.
Curteman, Darwin; Pittsburg.
Davies, Jane; Pittsburg.
Decker, Christle; Pittsburg.
De Gasperi, John; Pittsburg.
Dellenger, Mary Catherine; Pittsburg.
Dellenger, William; Pittsburg.
Devaney, Opal; Pittsburg.
Dickey, Helen; Pittsburg.
Dickenson, David; Pittsburg.
Dineen, Lorene; Pittsburg.
Downs, Lewis; Pittsburg.
Doyle; Archie James; Pittsburg.
Dragoo, Claire; Pittsburg.
Dudgeon, Morris; Pittsburg.
Ellsworth, Amelia Mary; Pittsburg.
Fikes, Russell; Pittsburg.
Freeman, William; Pittsburg.
Geatches, Alice Craig; Pittsburg.
Geatches, Stephen; Pittsburg.
Gibb, Elinor; Pittsburg.
Gieselman, Frances; Pittsburg.
Gold, Norma; Pittsburg.
Graver, George; Pittsburg.
Graves, Elizabeth; Pittsburg.
Graves, Ruth; Pittsburg.
Green, Opal; Pittsburg.
Guffey, Margaret; Pittsburg.
Guffey, Mary Elizabeth; Pittsburg.
Hall, Dale; Pittsburg.
Hall, Glenn; Pittsburg.
Hanson, Dorothy; Pittsburg.
Hanson, Eleanor; Pittsburg.
Herron, Norman; Pittsburg.
Hoffman, Vera; Pittsburg.
Howe; Martha Mae; Pittsburg.
Hynds, Milton; Pittsburg.
James, Marie; Pittsburg.
Janeski, Emma; Pittsburg.
Jenkins, Louis; Pittsburg.
Jenkins, Maynard; Pittsburg.
Johnson, Naomi; Pittsburg.
Jones, Paul; Pittsburg.
Jones, Pauline; Pittsburg.
Keegan, Francis; Pittsburg.
Kelso, Helen Shirley; Pittsburg.
Lane, Cyrus; Pittsburg.
Lochead, George Thomas; Pittsburg.
Lough, Imogene; Pittsburg.
Lough, Mary; Pittsburg.
McGavran, Emmett; Pittsburg.
McGavran, Lawrence; Pittsburg.
McGinley, Frances; Pittsburg.
McMurray, William; Pittsburg.
McNally, Edward; Pittsburg.
McNally, Mary Adele; Pittsburg.
Mechetta, Margaret; Pittsburg.
Mackie, Margaret Mary; Pittsburg.
Mann, Mary Jane; Pittsburg.
Marty, Mary; Pittsburg.
Marsh, Patti; Pittsburg.
Mead, Evelyn Ann; Pittsburg.
Mead, Ina Sue; Pittsburg.
Menichetti, Emil; Pittsburg.
Millard, Raymond; Pittsburg.
Millard, Roland; Pittsburg.
Miner, Maxine; Pittsburg.
Moore, Nadine; Pittsburg.
More, Maurine; Pittsburg.
Morris, Norman; Pittsburg.
Mosin, Audrian; Pittsburg.
Murphy, Elizabeth Ann; Pittsburg.
Nesch, Betty; Pittsburg.
Nesch, Robert; Pittsburg.
Nichols, Christine; Pittsburg.
Nichols, Ruth; Pittsburg.
Norris, Norman; Pittsburg.
Patmore, Jean; Pittsburg.
Pease, Daniel; Pittsburg.
Pease, Esther; Pittsburg.
Pease, Ruth Ione; Pittsburg.
Pellegrino, George; Pittsburg.
Pellegrino, Harold; Pittsburg.
Perkins, Frances; Pittsburg.
Pollard, Albert; Pittsburg.
Probst, Frederick; Pittsburg.
Richards; Merrill; Pittsburg.
Richards, Nina; Pittsburg.
Riley, Eileen; Pittsburg.
Risk, Nonette; Pittsburg.
Robins, Merle; Pittsburg.
Roby, Darlene; Pittsburg.
Rogers, Ray T.; Pittsburg.
Rust, John; Pittsburg.
Rust, Louise; Pittsburg.
Rust, Mary Elizabeth; Pittsburg.
Scott, Arthur; Pittsburg.
Scott, Helen; Pittsburg.
Scott, Lois; Pittsburg.
Scott, Robert; Pittsburg.
Scranton, Hazel; Pittsburg.
Scranton, Helen; Pittsburg.
Scranton, William; Pittsburg.
Seeley, James; Pittsburg.
Sell, Paul; Pittsburg.
Shafer, John Richard; Pittsburg.
Shannon, Irl; Pittsburg.
Shannon, Leroy; Pittsburg.
Sherwood, John; Pittsburg.
Shirk, Gevene; Pittsburg.
Simon, Katie; Pittsburg.
Skahan, James; Pittsburg.
Smith, Aaron; Pittsburg.
Sparks, Edna; Pittsburg.
Sparks; Hazel; Pittsburg.
Sparks, Jack; Pittsburg.
Sparks, Violet; Pittsburg.
Stefancic, Mary; Pittsburg.
Stoft, Leone; Pittsburg.
Sturm, John; Pittsburg.
Tanner, Lorene; Pittsburg.
Titterington, Ronald: Pittsburg.
Toft, Melvin; Pittsburg.
Todd, Elizabeth: Pittsburg.
Trout, Mary; Pittsburg.
Utz, Frank; Pittsburg.
Walker, Geraldine; Pittsburg.
Waskey, Josephine; Pittsburg.
Wasser, Edna; Pittsburg.
Weathers, Reno; Pittsburg.

TRAINING SCHOOL—*Concluded.*

Webb, James Edwin; Pittsburg.
Webb, Millard; Pittsburg.
Webb, Phillip; Pittsburg.
Webster, Arthur; Pittsburg.
Webster, Vida; Pittsburg.
Weddle, Alice; Pittsburg.
Weede, Dorothy; Pittsburg.
Weede, Richard; Pittsburg.
Whitley, John Carl; Pittsburg.
Whitesitt, Robert; Pittsburg.
Wiles, Emma; Pittsburg.
Williams, Carter; Pittsburg.
Williams, Wendell; Pittsburg.
Wines, Mardell; Pittsburg.
Wolf, Olga; Pittsburg.
Wood, Charlotte; Pittsburg.
Wood, Dorothy; Pittsburg.
Wood, Virginia; Pittsburg.

Special Vocational Students.

Adair, Frank Milton; Frontenac.
Adams, Frank Martin; Pittsburg.
Anderson, Arthur; Lincoln.
Attkisson, Alta Edna; Hepler.
Barbatti, Joseph; *Taylor, Ill.*
Bell, Willis Leo; *Newton, Miss.*
Belsley, Ira Lee; Ottawa.
Bennett, Guy; Pittsburg.
Benson, Clifford Jennings; *Willard, Mo.*
Benton, Clarence Dickinson; Pittsburg.
Bird, Coline Mardell; Pittsburg.
Blackett, Carl Albert; Girard.
Boham, Anson Alfred Arlington; *Rosendale, Mo.*
Boham, Bessie Catherine; Pittsburg.
Bonner, Patrick L.; *Bayonne, N. J.*
Bork, Eddie Adam; Frontenac.
Bournonville, Everett Lynn; Pittsburg.
Bruno, Domenick; *Belleville, Ill.*
Bryan, Herbert Lee; *Lexington, Mo.*
Bryant, Vernon Lee; *Richland, Mo.*
Bugbee, Charles William; Pittsburg.
Burgess, Georgia Evelyn; Pittsburg.
Burns, John H.; Frontenac.
Bussey, James Carl; Pittsburg.
Button, Arch Wallace; Baxter Springs.
Cady, Paul Frank; Pittsburg.
Cammack, Sumner Hays; McCune.
Carpenter, Henry Watson; *Herman, Neb.*
Carter, Charlie C.; Cherokee.
Castetter, Harold Hiram; *Philadelphia, Pa.*
Christian, James W.; *Fairview, Mo.*
Circle, Hazel Irene; Galena.
Clark, Rolla Albert; *St. Louis, Mo.*
Collie, James Martin; Pittsburg.
Comer, Cecil; Girard.
Copeland, William Walter; Roseland.
Cottrell, William Raymond; Iola.
Cowden, Howard; Pittsburg.
Cox, Bruce; *Neosho, Mo.*
Cox, Lloyd Bruce; Hutchinson.
Crisler, George Dewey; Perth.
Cunningham, Ben; Wichita.
Decuyper, Fernand; Arma.
Donaldson, Claude Elmer; *Pana, Ill.*
Dooley, Charlie; *Tracy, Iowa.*
Downing, Lavone; Pittsburg.
Duncan, Henry Dalton; *Webb City, Mo.*
Dunn, Orville; *San Antonio, Tex.*
Durand, Stanley Edward; *Stockton, Cal.*
Dutro, Marie E.; *Burkburnett, Tex.*
Duval, Gaston; Pittsburg.
Edmondson, Chester McCormick; Girard.
Evans, William Franklin; *Kansas City, Mo.*
Ferree, Frances Lillian; Pittsburg.
Fisher, Felix William; *Gaston, Mo.*
Forester, Samuel Johnson; Pittsburg.
Forman, Hugh, jr.; Pittsburg.
Forsyth, Rudolph E.; Pittsburg.
Frank, John William; *St. Louis, Mo.*
Fredericks, Aubrey Leonard; *Kansas City, Mo.*
Fuson, Richard D.; *St. Joseph, Mo.*
Gaffney, Josephine Agnes; Arcadia.
Gage, Joe Stanley; Geneseo.
Galvin, Ben C.; Fort Scott.
Gardner, Chester Clarence; Kansas City.
Garner, Horace Manford; *Fairview, Mo.*
Gentry, Carey Frank; Petrolia.
Geyer, Louise Catherine; Pittsburg.
Gilbert, Samuel P.; *Manchester, Iowa.*
Good, George Leonard; Seneca.
Grotheer, Adeline E.; Pittsburg.
Guinn, Roy Carey; Pittsburg.
Hackney, Harry Slover; *St. Joseph, Mo.*
Harmon, Bryan Milton; Girard.
Harpole, Phillip Herman; Pittsburg.
Harrod, Fon J.; Paola.
Herron, Connie R.; Ottawa.
Herron, George B.; *Joplin, Mo.*
Hile, Ernest Everett; *Kansas City, Mo.*
Hinckley, Fred Tullas; *Joplin, Mo.*
Hitzemann, Clarence A.; Tonganoxie.
Hobson, Arthur Roy; Pittsburg.
Hobson, Lester Floyd; Pittsburg.
Holmes, James Freddie; Pittsburg.
Holmes, William; Weir.
Hope, Esther; Pittsburg.
Hope, James; *Albia, Iowa.*
Hostutler, Hoyt; Pittsburg.
Howard, Lizzie Temperance; *Goodman, Mo.*
Howell, Lucille Elma; Scammon.
Huss, Roy Allen; Hanersville.
Hutchinson, Mrs. Lewis; Pittsburg.
Jackson, Robert Middleton; *Miles City, Mont.*
Jarrell, Earl; Pittsburg.
Jenkins, Lewis Anson; Weir.
Jessup, Martin; Pittsburg.
Johnson, Letha Myrtle; *Asbury, Mo.*
Johnson, Morris E.; Opolis.
Jones, Harold C.; Lebo.
Kays, Jesse Loran; *Warsaw, Mo.*
Kenoyer, Leo Earl; Hutchinson.
Kent, John Coleman; *Madison, Mo.*
Koesterer, Edwin A.; *Freeburg, Ill.*
Koontz, Leonard F.; Fort Scott.
Koopman, Emma Marie; Pittsburg.
Kopsky, Alexander; *Belleville, Ill.*
Koury, Mike; Pittsburg.
Lain, Charles Otto; Parsons.
Laird, John Henry; *Vandalia, Mo.*
Langston, Anthony Bryan; *Springfield, Mo.*
Larcher, Frank Joseph; *Gillespie, Ill.*
Lawson, William Edwin; Wichita.
Lewis, Llewelleyn Clarence; *Des Moines, Iowa.*
McClelland, Minnie Della; Girard.
McCleney, John S.; *Empire, Ala.*
McConaha, Glen Rolland; Pittsburg.
McDowell, Grover Cleveland; *Kansas City, Mo.*
McDyson, Albert; Plains.
McGee, Clarence Samuel; *Kansas City, Mo.*
McGrath, Allman De la Rue; *Kansas City, Mo.*
McMahon, Earl Martin; Derby.
Mallams, Thomas Edward; Weir.
Manley, Edgar Riley; Pittsburg.
Marshall, Floyd Robert; Lawton.
May, Velma Olga; Pittsburg.
Miller, Everett Bruce; *Minden, Neb.*

Special Vocational—*Concluded.*

Miller, Merle Aubrey; *Bethany, Mo.*
Mislin, Karl Joseph; Kansas City.
Mitchell, Ezra Carboso; Wichita.
Mitchell, Margueritte Zerrilla; Pittsburg.
Mock, Oren T.; *Kalamazoo, Mich.*
Mordica, Bertha Victoria; Pittsburg.
Morris, April; Coffeyville.
Murphy, Lester E.; Hutchinson.
Murray, Vera; *Liberal, Mo.*
Mustard, Doyle Raymond; McCune.
Neill, Robert Newell; Nortonville.
Newbery, Charles Adah; Columbus.
O'Dell, Beulah Myrtle; *Asbury, Mo.*
Oliver, Floyd John; Iola.
Ott, Daniel Walter; Kinsley.
Owen, Cassie; *Bankhead, Ala.*
Palling, Robert Gibson; Pleasanton.
Paoli, Guido; *Collinsville, Ill.*
Pergi, Frank; *Odalo, Italy.*
Pigg, Robert F.; Pittsburg.
Plagens, Otto; Pittsburg.
Price, Daniel Webster; Pittsburg.
Price, Jack Gerald; Pittsburg.
Prock, Wallace William; Girard.
Ray, Edwin; *Wayne City, Ill.*
Raymond, Charles Edward; *Kansas City, Mo.*
Remey, George Joseph; Pittsburg.
Rensing, Neal Louis; Pittsburg.
Richards, Merle Ralph; Pittsburg.
Riley, Mike F.; Frontenac.
Risk, Inez Lofton; Pittsburg.
Rogers, Curtis Davis; Kansas City.
Rowe, Atice Calvin; Pittsburg.
Sager, Abner Vergil; McPherson.
Salsman, Byrl; Pittsburg.
Sandwith, Alfred Edwin; Girard.
Scavezze, Nilo; Frontenac.
Schasteen, John Luther; Pittsburg.
Seaman, Herbert Henry; Pittsburg.
Sheridan, Clyde; *Trafford, Ala.*
Slown, Cyril Lealand; Oakley.
Smith, Albert Olive; *Kansas City, Mo.*
Smith, Neal; *Kansas City, Mo.*
Smith, Victor Daniel; *Chillicothe, Mo.*
Starr, Joseph Albert, jr.; *Sedalia, Mo.*
Stoeber, Herman John; *Belleville, Ill.*
Stoltz, Ferdinand Henry; Ottawa.
Sullivan, Millard Lee; *Marionville, Mo.*
Taber, Maynard Ulysses; *Granby, Mo.*
Taylor, Revy; Lawrence.
Taylor, Russell L.; Iola.
Telfer, Wilma Gertrude; Pittsburg.
Templer, Alfred Linnwood; Wichita.
Theill, Lawrence Lee; *Kansas City, Mo.*
Thomas, David; *Mystic, Iowa.*
Thomas, Joseph Wilson; *Joplin, Mo.*
Turner, Orville Harold; Wellington.
Vaness, Mildred; *Okmulgee, Okla.*
Wade, Jesse Duke; Ottawa.
Walker, Vinton Aubrey; Kansas City.
Wallace, Berton Earl; Arma.
Walton, Clarence Raymond; *Higbee, Mo.*
Ware, Seth; Pittsburg.
Weisner, Leo Laurence; Meriden.
Wente, Fred Frederick; Frontenac.
Wheeler, Fred Gaskill; Pittsburg.
Whiffin, Uridge Glenn; Horton.
White, Mildred Irene; Weir.
Whitton, William; Leavenworth.
Willard, Sherman Kirk; *Sleeper, Mo.*
Williamson, Sherman Henry; Oskaloosa.
Wilson, Eugenia N.; Pittsburg.
Wilson, Grant; *Versailles, Mo.*
Wisdom, John M.; Columbus.
Wright, James Brockway; Pittsburg.
Wright, Verner Roscoe; Weir.
Zimmerman, John Wesley; *Nevada, Mo.*

Trade and Industrial Extension.

Abbott, Chris C.; Pittsburg.
Adams, Ernest Perry; Scammon.
Alderson, Walter E.; Pittsburg.
Alderson, Mrs. Walter E.; Pittsburg.
Alexander, Gertrude; Pittsburg.
Alexander, LaVon B.; Pittsburg.
Allen, Lora A.; Pittsburg.
Allender, Agnes M.; Pittsburg.
Anderson, Gustaf A.; Scammon.
Armstrong, Arthur; Pittsburg.
Ayers, Nell Wren; Pittsburg.
Baker, Myrtle Maye; Pittsburg.
Becker, Harry B.; Pittsburg.
Bernhardt, Thomas H.; Arma.
Bertino, William; Mulberry.
Bevins, Nelle; Pittsburg.
Bickle, Gus L.; Pittsburg.
Bork, Lawrence; Pittsburg.
Bourland, Louis; Pittsburg.
Bradfield, Ellis H.; Pittsburg.
Brazleton, Ernest E.; Pittsburg.
Brazleton, Harvey; Pittsburg.
Brecko, Louis; Pittsburg.
Bresee, Fred; Pittsburg.
Briggs, Claud E.; Pittsburg.
Brisbin, James; Pittsburg.
Brisbin, John; Pittsburg.
Brooks, William; Scammon.
Brown, Leonard Ray; Pittsburg.
Brunetti, Leonello; Pittsburg.
Brynds, Esther; Pittsburg.
Burgery, Mrs. Ramsay; Pittsburg.
Burke, Howard P.; Pittsburg.
Cady, Lynn E.; Pittsburg.
Campbell, Harley E.; Arma.
Campbell, William; Arma.
Carpenter, Elsie Allan; Pittsburg.
Carr, Arthur; Arma.
Carr, Charles E.; Mulberry.
Carter, Adah; Pittsburg.
Carter, Mabel; Pittsburg.
Cartwright, James William; Carona.
Cartwright, John Henry; Carona.
Cass, Iva Leona; Pittsburg.
Claunch, Carl; Mulberry.
Clark, William Wallace; Pittsburg.
Coates, Linley; Mulberry.
Cochran, Lee; Pittsburg.
Cogswell, Helen; Pittsburg.
Cole, Harold Wright; Pittsburg.
Connet, Ina; Pittsburg.
Conrad, Ben K.; Pittsburg.
Copeland, George; Scammon.
Cordray, Floyd M.; Frontenac.
Cornell, Lorenzo; Pittsburg.
Cunningham, Elmer; Scammon.
Curfman, Mrs. L. E.; Pittsburg.
Dallas, Stella; Pittsburg.
Daniels, Clay; Pittsburg.
Dauben, Howard; Mulberry.
Dauben, Samuel; Mulberry.
Davis, Clarence; Franklin.
Davis, Gene; Pittsburg.
Davis, Orville D.; Pittsburg.
Davis, Walter Thomas; Pittsburg.
De Gasperi, Lola J.; Pittsburg.
Demmon, Nellie; Pittsburg.
Denno, Vernon C.; Pittsburg.
Desselle, Jules Joseph; Mulberry.

Trade and Industrial Extension—*Continued.*

Dinneen, George B.; Pittsburg.
Dixon, John W.; Pittsburg.
Dobson, William H.; Pittsburg.
Dodson, J. W.; Cherokee.
Donahey, Helen Shirley; Pittsburg.
Drake, Ralph R.; Pittsburg.
Dray, Obadiah; Arma.
Dryer, Ben A.; Pittsburg.
Dunegan, R. D.; Pittsburg.
Dunham, Ruth Young; Pittsburg.
Dunkle, William B.; Pittsburg.
Dunn, James F.; Scammon.
Dunton, Clair; Arcadia.
Early, Irwin; Mulberry.
Eason; Leo E.; Pittsburg.
Edmiston, John; Pittsburg.
Edwards, Mavolene E.; Pittsburg.
Egger, Edward; Pittsburg.
Elgin, Wayne; Pittsburg.
Ellis, William; Frontenac.
Evans, Ruth; Pittsburg.
Farrimond, George; Arma.
Ferguson, Hazel; Pittsburg.
Ferguson, Ralph L.; Pittsburg.
Fern, Francis; Scammon.
Fern, John Patrick; Scammon.
Fern, John Paul; Scammon.
Fisher, James G.; Pittsburg.
Flark, William Virgil; Pittsburg.
Flynn, Joseph; Mulberry.
Fornal, Albert; Mulberry.
Frame, Grace I.; Pittsburg.
Frank, Regina K.; Bellingham, Wash.
Frazer, Robert Charles; Girard.
Frederick, Fred; Pittsburg.
Fruit, G. I.; Pittsburg.
Gallagher, Edward; Scammon.
Gebarhardt, F. H.; Mulberry.
Getto, Barney; Frontenac.
Glenn, Walter; Pittsburg.
Glennon, Tom; Pittsburg.
Glennon, William; Pittsburg.
Goffe, A. A.; Pittsburg.
Goffe, Vina H.; Pittsburg.
Goodinson, Horace Lorenzo; Arma.
Goodman, Robert M.; Mulberry.
Grant, Joseph M.; Scammon.
Gray, Louise S.; Pittsburg.
Gregory, Mrs. W. T.; Pittsburg.
Griffith, David Roy; Mulberry.
Gross, Myrtle; Pittsburg.
Grotheers, Paul; Pittsburg.
Guthridge, Mrs. L. A.; Pittsburg.
Haddow, David; Franklin.
Hale, Thomas; Arcadia.
Haney, Clay; Scammon.
Hardy, Freeman; Pittsburg.
Harrison, M. C.; Pittsburg.
Harry, Glen D.; Pittsburg.
Hart, R. W.; Pittsburg.
Hartwig, Ed.; Pittsburg.
Havey, Earl; Scammon.
Hay, John; Frontenac.
Heller, George W.; Croweburg.
Hesson, Elwyn E.; Pittsburg.
Hillman, Fred W.; Pittsburg.
Hisle, Jessie; Pittsburg.
Hisle, Mrs. E.; Pittsburg.
Hislop, William; Arma.
Hoffman, Alice; Pittsburg.
Hoffman, Elizabeth; Pittsburg.
Hoffman, George W.; Weir.
Holden, Dana A.; Pittsburg.
Holden, Fred S.; Pittsburg.
Holman, Harry E.; Pittsburg.
Hoover, Elmer Earl; Pittsburg.
Hornbuckle, George Edward; Pittsburg.
Houck, Walter; Pittsburg.
Huffman, George H.; Weir.
Hughes, E. B.; Pittsburg.
Hunt, Raymond; Pittsburg.
Hurst, Oscar; *Alton, Ill.*
Hutchinson, Mary Elizabeth; Pittsburg.
Iserman, Mrs. Edna; Pittsburg.
Jackson, C. Leonard; Pittsburg.
James, Silas; Mulberry.
James, William Robert; Pittsburg.
Jamison, Florean; Pittsburg.
Jeffcoat, Marguerite; Pittsburg.
Jenkins, Dave; Mulberry.
Jenkins, George; Scammon.
Johnson, Elbert; Pittsburg.
Jones, Esther D.; Pittsburg.
Jones, Frank H.; Scammon.
Jones, Mrs. M. E.; Pittsburg.
Jones, W. L.; Mulberry.
Junken, Fred; Mulberry.
Kautzman, Thomas; Pittsburg.
Keeth, Raymond Francis; Pittsburg.
Keller, Esther E.; Pittsburg.
Kelly, J. G.; Cherokee.
Kendeg, George H.; Mulberry.
Kidder, Mrs. G. W.; Pittsburg.
Kimmel, Garret Ward; Pittsburg.
King, Beatrice; Pittsburg.
King, Edward W.; Pittsburg.
Klein, Emile; Frontenac.
Klein, Thomas C.; Arma.
Koopman, Arnold, Pittsburg.
Krois, Frances B.; Pittsburg.
Krusich, John A.; Frontenac.
Kyneon, Sam; Franklin.
Lafferty, James Jerome; Mulberry.
Lampton, William J.; Scammon.
Lathrop, Elizabeth; Pittsburg.
Laws, Robert; Radley.
Lease, Mrs. Ida; Pittsburg.
Lease, James L.; Pittsburg.
Leaird, Charles; Pittsburg.
Lechien, Henry; Mulberry.
Lehman, Leonard; Mulberry.
Leland, Charles; Mulberry.
Lewis, Cora E.; Pittsburg.
Lil, Juanita Frances; Pittsburg.
Linthicum, Kathryn Christel; Pittsburg.
Litton; G. A.; Pittsburg.
Long, May G.; Pittsburg.
Longstaff, Ralph; Scammon.
Lyons, Charles John; Pittsburg.
McClay, Jennie; Pittsburg.
McClenahan, Sadie; Pittsburg.
McCoy, Thomas; Pittsburg.
McCulloch, David; Mulberry.
McCulloch, George; Mulberry.
McElwain, Charles E.; Mulberry.
McGill, George McPherson; Arma.
McGoey, Carl Robert; Pittsburg.
McLarty, Walter B.; Pittsburg.
McPherson, Ralph E.; Mulberry.
Maciejasz, John; Pittsburg.
Maddox, Wilmer; Mulberry.
Malle, Fred; Scammon.
Manning, Edward A.; Pittsburg.
Mark, William; Arma.
Martin, Calvin O.; Pittsburg.
Martin, Clifford; Pittsburg.
Martin, Edward F.; Mulberry.
Masterson, Francis; Scammon.
Masterson, John Patrick; Scammon.
Mathes, Mrs. M. G.; Pittsburg.
May, Isaac; Cherokee.
Meidl, Louie; Pittsburg.
Meiers, E. H.; Pittsburg.

TRADE AND INDUSTRIAL EXTENSION—*Concluded.*

Menghini, Antone; Frontenac.
Mineard, Samuel; Pittsburg.
Moffatt, William; Pittsburg.
Monahan, Francis A.; Pittsburg.
Monahan, John Lawrence; Pittsburg.
Monahan, Margaret Mary; Frontenac.
Montgomery, George Pearl; Pittsburg.
Moody, George; Mulberry.
Morgan, Ben A.; Arma.
Morgan, John; Arma.
Mullen, Charles; Mulberry.
Mundt, Charles; Pittsburg.
Mundt, Christ M.; Pittsburg.
Mundt, Henry; Pittsburg.
Mundt, Theodore; Pittsburg.
Mundt, Walter F.; Pittsburg.
Munson, Lesslie L.; Scammon.
Murdock, Frank; Pittsburg.
Mussa, John; Scammon.
Muzzy, Ferne; Pittsburg.
Nelson, E. Viola; Pittsburg.
Nett, Mrs. Bert Dell; Pittsburg.
Nett, Stella; Pittsburg.
Nett, Mrs. W. J.; Pittsburg.
Nolan, John M.; Frontenac.
O'Donnell, Maurice; Frontenac.
O'Hara, Kathryn Nora; Frontenac.
O'Hara, Patricia; Frontenac.
Oliver, Thomas William; Pittsburg.
Olson, Alder T.; Mulberry.
Olson, Alfred; Mulberry.
Olson, Fred M.; Mulberry.
Owens, Adah; Pittsburg.
Palmer, James R.; Arma.
Paoli, Joseph; Frontenac.
Papesh, Albert; Pittsburg.
Parker, Chester Lee; Scammon.
Parra, Philip J.; Frontenac.
Payne, Earl Russell; Mulberry.
Payne, Ira R.; Scammon.
Pease, Sylvia Juanita; Pittsburg.
Pepin, John Arthur; Mulberry.
Perry, Arthur Wallace; Pittsburg.
Perry, John E.; Pittsburg.
Phelps, Silas L.; Mulberry.
Phillips, Blanche Hazel; Pittsburg.
Pierpont, Blanche Hazel; Pittsburg.
Pirnot, Julius; Girard.
Plagens, Hertha; Pittsburg.
Portwood, W. M.; Mulberry.
Price, R. Carba; Pittsburg.
Purdon, John; Pittsburg.
Quarton, Charles R.; Scammon.
Quinlan, Harry Joseph; Pittsburg.
Quinn, Mrs. Thomas; Pittsburg.
Rebecca, Pete; Frontenac.
Rector, Joseph E.; Pittsburg.
Reed, Sidney F.; Pittsburg.
Reedy, Paul; Scammon.
Reese, Hannah M.; Pittsburg.
Reynolds, Amy; Frontenac.
Reynolds, Anna R.; Pittsburg.
Richards, Al; Pittsburg.
Richards, Mrs. Alfred M.; Pittsburg.
Riddle, Thomas C.; Pittsburg.
Riley, Homer W.; Pittsburg.
Robinson, Ira L.; Mulberry.
Robson, Ruth Elliott; Pittsburg.
Robson, William E.; Pittsburg.
Rogers, Jesse Clarence; Pittsburg.
Rosentiel, Earl Forest; Pittsburg.
Rosentiel, Frank Milton; Pittsburg.
Ruddick, Clarence; Mulberry.
Runyan, Grace; Pittsburg.
Runyan, R. D.; Mulberry.
Russell, Mary; Pittsburg.
Russell, William; Pittsburg.
Ryan, Mary E.; Pittsburg.
Ryan, Ray M.; Pittsburg.
Rybnicek, Frank; Frontenac.
Ryder, Andrew James; Pittsburg.
Sanders, Homer L.; Pittsburg.
Sanders, Mrs. Jessie; Pittsburg.
Savant, Mark; Pittsburg.
Sawyer, Charles; Scammon.
Schallo, Edyth; Pittsburg.
Schooley, Floyd; Pittsburg.
Sergeant, Lou; Pittsburg.
Seward, Mrs. Mary Lucy; Pittsburg.
Sharp, Lem; Arma.
Sherman, Edward; Pittsburg.
Sherwood, Edna Pearl; Pittsburg.
Sherwood, James; Pittsburg.
Shipley, Ed; Mulberry.
Singer, Dr. Frances H.; Kirkwood.
Sloan, Finis H.; Pittsburg.
Smallwood, Lottie Lela; Pittsburg.
Smith, Daniel Franklin; Pittsburg.
Smith, Florence M.; Pittsburg.
Smith, J. D.; Pittsburg.
Smith, Riley George; Mulberry.
Sparks, Loy O.; Pittsburg.
Spriggs, John David; Pittsburg.
Stafford, Charles; Mulberry.
Stanley, William Curtis; Scammon.
Steele, James Clarence; Scammon.
Sterling, Ernest Howard; Pittsburg.
Stockinger, Joe; Frontenac.
Swofford, W. W.; Pittsburg.
Tannehill, Maye; Pittsburg.
Telfer, Wilma; Pittsburg.
Tennant, Bessie; Pittsburg.
Tenney, Willard H.; Mulberry.
Teodori, Angelo; Pittsburg.
Theis, Nellie; Weir.
Thomas, Carrie M.; Pittsburg.
Thomas, Leslie; Pittsburg.
Thomas, William F.; Mulberry.
Thompson, Allen; Scammon.
Tilton, Ruth; Pittsburg.
Utz, Albert; Pittsburg.
Utz, Matt Louis; Pittsburg.
Van Deventer, John Harold; Pittsburg.
Van Duker, John A.; Girard.
Van Duker, William; Mulberry.
Vanrieto, George; Pittsburg.
Vincenti, Anton; Pittsburg.
Vilmer, Mrs. Zella.
Walker, Bert C.; Pittsburg.
Wallner, Rudolph; Frontenac.
Waylan, Earl; Carona.
Webb, Edward J.; Mulberry.
Webb, Samuel Earl; Mulberry.
Welch, Arthur Harrison; Pittsburg.
Welch, Thomas; Carona.
Welty, Myrtle; Pittsburg.
Wendling, Louis C.; Pittsburg.
West, Ira A. E.; Mulberry.
White, George H.; Arma.
White, George P.; Pittsburg.
White, Julia; Pittsburg.
Wiles, Charles A.; Pittsburg.
Williamson, Clara; Pittsburg.
Williamson, Ray; Pittsburg.
Wilson, Fred Lee; Frontenac.
Wilson, Herbert; Pittsburg.
Wilson, William; Pittsburg.
Wolfe, Arthur B.; Pittsburg.
Woodbury; Lester L.; Pittsburg.
Yarrington, Horace; Mulberry.

Summary of Attendance, 1920-'21.

(Not including spring term.)

BY CLASSES AND DEPARTMENTS.

Graduates	34
COLLEGE DEPARTMENT.	
Seniors	161
Juniors	246
Sophomores	487
Freshmen	1,128
Specials	86
DEPARTMENT OF MUSIC.	
Students in music	271
SENIOR PREPARATORY DEPARTMENT.	
Seniors	80
Juniors	92
Sophomores	100
JUNIOR PREPARATORY DEPARTMENT.	
Ninth grade	51
Eighth grade	31
Seventh grade	27
TRAINING SCHOOL.	
First six grades and kindergarten	188
SPECIAL VOCATIONAL STUDENTS.	
Students taking vocational subjects only	203
Trade and industrial extension students	372
Enrollments, including duplicates	3,557
Total duplicates	143
Total separate enrollments	3,414

BY STATES.

Kansas	3,010
Alabama	3
Arkansas	11
Arizona	1
California	1
Colorado	2
District of Columbia	1
Florida	1
Georgia	1
Hawaii	1
Idaho	3
Illinois	16
Indiana	2
Iowa	13
Kentucky	1
Michigan	2
Minnesota	2
Mississippi	1
Missouri	261
Montana	4
Nebraska	5
New Jersey	1
Ohio	1
Oklahoma	56
Pennsylvania	1
Rhode Island	1
Tennessee	1
Texas	7
Virginia	1
Washington	1
West Virginia	1
Wisconsin	1
Total separate enrollments,	3,414

SUMMARY OF ENROLLMENT, CERTIFICATES AND DEGREES BY YEARS.

School year.	One-year certificates.	Three-year certificates.	Life certificates.	Degrees.	Separate enrollments.	Total number credentia issued.
1903-'04...	14	....	....	....	143	14
1904-'05...	40	....	....	....	184	40
1905-'06...	23	9	....	....	276	32
1906-'07...	31	14	....	....	351	45
1907-'08...	21	11	....	....	325	32
1908-'09...	16	44	....	....	467	60
1909-'10...	26	38	12	....	723	76
1910-'11...	20	18	80	....	1066	118
1911-'12...	41	74	96	....	1183	211
1912-'13...	49	80	113	13	1416	225
1913-'14...	88	138	153	22	1650	400
1914-'15...	83	123	208	51	2159	445
1915-'16...	75	127	240	52	2514	494
1916-'17...	156	149	224	73	2745	602
1917-'18...	302	148	207	49	3433	706
1918-'19...	462	120	178	66	3088	846
1919-'20...	463	166	184	92	3197	927
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* Spring term and other late enrollments are not included.

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